MAINTENANCE & SERVICE GUIDE

for Prosignia 320 Series Computer

Index page | Preface -or- Notice | Product Description | Illustrated Parts Catalog
Removal & Replacement | Jumper & Switch Settings | Troubleshooting | Specifications

Welcome to the Maintenance & Service Guide (MSG) for Prosignia 320 Series Computer.

Please See the Notice for copyright & trademark information, and the Preface for symbol conventions & technician notes.

Click here to download the complete ZIP file (3.5 MB) of this Maintenance & Service Guide to your hard drive.

This MSG will be periodically maintained and updated as needed.
To report a technical problem, contact your Regional Support Center or IM Help Center.
For content comments or questions, contact the Editor.

Revised: September 17th, 1999

PREFACE

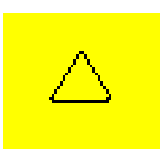
This *Maintenance and Service Guide* is a troubleshooting guide that can be used for reference when servicing the Compaq Prosignia Series Computers.

Compaq Computer Corporation reserves the right to make changes to the Compaq Prosignia SeriesComputers without notice.

Symbols

The following words and symbols mark special messages throughout this guide.

WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life.

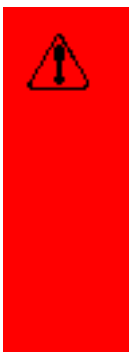


CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of data.

IMPORTANT: Text set off in this manner presents clarifying information or specific instructions.

NOTE: Text set off in this manner presents commentary, sidelights, or interesting points of information.

Technician Notes



WARNING: Only authorized technicians trained by Compaq should repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module level repair. Because of the complexity of the individual boards and subassemblies, the user should not attempt to make repairs at the component level or to make modifications to any printed circuit board. Improper repairs can create a safety hazard. Any indications of component replacement or printed circuit board modifications may void any warranty.

Serial Number

When requesting information or ordering spare parts, the computer's serial number should be provided to Compaq. The serial number can be found on the rear of the computer's chassis, above the power supply.

Locating Additional Information

The following documentation is available to support this product:

- Compaq Prosignia documentation set
- *Introducing Windows 95 Guide*
- Service Training Guides
- Compaq Service Advisories and Bulletins
- *Compaq QuickFind*
- *Compaq Service Quick Reference Guide*
- *Compaq Help Center*

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NOTICE

The information in this guide is subject to change without notice.

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Maintenance and Service Guide Compaq Prosignia Series Computers First Edition (Febuary 1999) Compaq Computer Corporation

MAINTENANCE & SERVICE GUIDE

for Prosignia 320 Series Computer

Product Description

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CPU Controls & Lights
Keyboard Controls and Lights
CPU Rear Connectors
Power Cord Set Requirements

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- Mass Storage Devices
- Cable Kit
- System Board
- Modem
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- Monitors
- Return Kit
- Documentation & Software
- Miscellaneous

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Removal & Replacement

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Specifications

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- System Unit
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- Diskette Drive
- Hard Drives
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- Modem/Fax
- Mouse
- Pin Assignments

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Specifications

System

Section Navigation:

- >System Unit
- >CD Drives
- >Diskette Drive
- >Hard Drives
- >Power Supply
- >Modem/Fax
- >Keyboard & Mouse
- >Pin Assignments

General system specifications
Video memory
System interrupts
System I/O (system function - shipping configuration)
System memory
System DMA

General System Specifications		
	U. S.	Metric
Dimensions		
Height	7.7 in	19.6 cm
Depth	14.2 in	36.2 cm
Width	13.6 in	34.5 cm
BTUs		
Weight	18.3 lbs	8.3 kg
Environmental Requirements		
Temperature		
Operating	50° to 93° F	10° to 35° C
Shipping	-4° to 140° F	-40° to 60° C
Humidity (noncondensing)		
Operating	8% to 90%	8% to 90%
Nonoperating	95% Relative humidity @ 30° C	95% Relative humidity @ 30° C
Maximum Altitude (unpressurized)		
Operating	10,000 ft	3048 m
Nonoperating	30,000 ft	9144 m

Return to the top.

STB/n Vidia TNTv 3D AGP	
Resolution (maximum)	1600 x 1200
Colors Supported	16.7M
Refresh Rate	80 Hz, 90 Hz
Acceleration	3 ROP BitBLT, Line Draw, Text, Color Expansion, Basic Video Color Conversion an Scaling
Memory	16-MB SDRAM Standard

Return to the top.

System Interrupts	
Hardware IRQ	System Function
IRQ 0	System timer
IRQ 1	Standard 101/102-Key or Microsoft Natural Keyboard
IRQ 2	Programmable interrupt controller
IRQ 3	Communications Port (COM2)
IRQ 4	Communications Port (COM1)
IRQ 5	(free)
IRQ 6	Standard Floppy Disk Controller
IRQ 7	Printer Port (LPT1)
IRQ 8	System CMOS/real time clock
IRQ 9	Rockwell HCF 56K Data Fax PCI Modem Rockwell PCI Modem Enumerator Creative Sound Blaster AudioPCI 128 IRQ Holder for PCI Steering
IRQ 10	Intel 82371AB/EB PCI to USB Universal Host Controller IRQ Holder for PCI Steering
IRQ 11	STB Velocity 4400/4000 IRQ Holder for PCI Steering
IRQ 12	PS/2 Compatible Mouse Port
IRQ 13	Numeric data processor
IRQ 14	Primary IDE controller (dual fifo) Intel 82371AB/EB PCI Bus Master IDE Controller
IRQ 15	Secondary IDE controller (dual fifo) Intel 82371AB/EB PCI Bus Master IDE Controller

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Specifications

CD Drives

Section Navigation:

- >System Unit
- >CD Drives
- >Diskette Drive
- >Hard Drives
- >Power Supply
- >Modem/Fax
- >Keyboard & Mouse
- >Pin Assignments

32X CD Drive	
Disk Applicable Disk	CD-ROM (Mode 1 and 2) CD-DA, CD-XA, CD-RW (Mode 2, Form 1 and 2) Photo CD (Single and Multiple Session) Mixed Mode (Audio and Data Combined) CDI Ready
Capacity	650 MB (Mode 1, 12 cm)
Diameter Rotational Speed Center Hole Thickness Track Pitch	4.7 in, 3.15 in/12 cm, 8 cm 4200 rpm maximum 0.6 in/15 mm diameter 0.05 in/1.2 mm 1.6 µm
Block Size Mode 1 Mode 2 CD-DA CD-XA	 2048, 1024 bytes 2340, 2336, 1024 bytes 2352 bytes 2328 bytes
Interface	IDE
Access Times (typical)	
Random	< 100 ms
Full Stroke	< 150 ms
Audio Output Level	
Line Out	0.7 VRMS at 47 kOhms
Headphone	0.6 VRMS at 32 Ohms (maximum volume)
Data Transfer Rate	
Sustained Burst	150 KB/s (single) 1500 - 4800 KB/s (variable)
Cache Buffer	128 KB
Start-Up Time (typical)	< 7 seconds
Stop Time	< 4 seconds
Laser Parameters	
Type Wave Length Divergence Angle Output Power	Semiconductor Laser GaA1As 780 ± 25 nm 53.5° ± 1.5° 0.14 mW
Operating Conditions	
Temperature Humidity	41° - 113°F / 5° - 45°C 10 - 80%
Dimensions	
(HxWxD, maximum)	11.69 x 5.91 x 8.2 in / 4.29 x 15.01 x 20.8 cm
Weight	2.65 lbs / 1.2 kg

52X CD Drive	
Disk Applicable Disk	CD-ROM (Mode 1 and 2) CD-DA, CD-RW, Photo CD (Single and Multiple Session) CD-XA Ready CDI Ready
Capacity	540 MB (Mode 1, 12 cm) 650 MB (Mode 2)
Diameter Rotational Speed Center Hole Thickness Track Pitch	4.7 in, 3.15 in/12 cm, 8 cm 8350 rpm maximum 0.6 in/15 mm diameter 0.05 in/1.2 mm 1.6 µm
Block Size Mode 1 Mode 2 CD-DA CD-XA	 2048, 1024 bytes 2340, 2336, 1024 bytes 2352 bytes 2328 bytes
Interface	IDE
Access Times (typical)	
Random	< 100 ms
Full Stroke	< 150 ms
Audio Output Level	
Line Out	0.7 VRMS at 47 kOhms
Headphone	0.6 VRMS at 32 Ohms (maximum volume)
Data Transfer Rate	
Sustained Burst	150 KB/s (single) 2550 to 6000 KB/s (variable)
Cache Buffer	128 KB
Start-Up Time (typical)	< 15 seconds
Stop Time	< 3 seconds
Laser Parameters	
Type Wave Length Divergence Angle Output Power	Semiconductor Laser GaA1As 780 ± 25 nm 53.5° ± 1.5° 0.14 mW
Operating Conditions	
Temperature Humidity	41° - 113°F -- 5° - 45°C 10 - 80%
Dimensions	
(HxWxD, maximum)	11.69 x 5.91 x 8.2 in -- 4.29 x 15.01 x 20.8 cm
Weight	2.65 lbs -- 1.2 kg

Specifications

1.44 MB Diskette Drive

Section Navigation:

- >System Unit
- >CD Drives
- >Diskette Drive
- >Hard Drives
- >Power Supply
- >Modem/Fax
- >Keyboard & Mouse
- >Pin Assignments

Size (in)	3.5" (8.89 cm)
High Density (MB)	1.44 / 720 KB
Low Density (KB)	720
LED Indicators (Front Panel)	Green
Height	One-third
Bytes per Sector	512
Drive Rotation	300 rpm
Transfer Rate	500/250 Kb/s
Sectors per Track	
High Density	18
Low Density	9
Tracks per Side	
High Density	80
Low Density	80
Read/Write Heads	2
Cylinder (high/low)	80/80
Average Seek Times	
Track-to-Track	3/6 ms
Average	94/173 ms
Settling Time	15 ms
Latency Average	100 ms

Specifications

Hard Drives

Section Navigation:

- >System Unit
- >CD Drives
- >Diskette Drive
- >Hard Drives
- >Power Supply
- >Modem/Fax
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- >Pin Assignments

Ultra ATA 7200 rpm Hard Drives			
Size	9.1 GB	13.5 GB	18 GB
Capacity	91000 MB	13500 GB	18000 GB
Height	1.0"	1.0"	1.0"
Size	3.5"	3.5"	3.5"
Interface	Ultra ATA	Ultra ATA	Ultra ATA
Transfer Rate			
Media (MB/s) Interface (MB/s)	139-224 MB/s 16.6 MB/s	139-224 MB/s 16.6 MB/s	139-224 MB/s 66.6 MB/s
Typical Seek Time (including settling)			
Single Track (ms) Average (ms) Full Stroke (ms)	1.7 ms 8.5 ms 15.0 ms	1.7 ms 8.5 ms 15.0 ms	1.7 ms 8.5 ms 15.0 ms
Physical Configuration			
Cylinders Data Heads Sectors per Track	15,011 4 214-312	15,011 6 214-312	15,011 10 214-312

Specifications

Power Supply

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- >System Unit
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- >Hard Drives
- >Power Supply
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	U. S.	Outside U. S.
Input Specifications		
Operating Voltage Range	90-131 VAC	180-255 VAC
Rated Voltage Range	100-127 VAC	200-240 VAC
Rated Line Frequency	47 to 63 Hz	47 to 63 Hz
Rated Input Current	4A	2A
Maximum Rated Power	145 Watts	145 Watts

Specifications

Modem/Fax

Section Navigation:

- >System Unit
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- >Diskette Drive
- >Hard Drives
- >Power Supply
- >Modem/Fax
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Compaq 56K Fax-modem	
Architecture	PCI
Compliance	V.90 Full ITU-T v.34 compliance Compliance with v.21, v.22, v22bis, v.23, v.32, v.32bis, Bell 103, Bell 212A
Connectors	RJ-11
Error correction	v.42, MNP2-4
Data Compression	v.42bis/MNP5
Fax Modulation	v.17, v.21, v.29, v.27Ter
Comand Set	Hayes AT, Class 1 Fax
OS Driver Support	MS Windows 95 (osr2), MS Windows NT Workstation 4.0

Specifications

Keyboard & Mouse

Section Navigation:

- > System Unit
- > CD Drives
- > Diskette Drive
- > Hard Drives
- > Power Supply
- > Modem/Fax
- > Keyboard & Mouse
- > Pin Assignments

Enhanced Keyboard	
Dimensions (H x W x L)	1.5 x 18.0 x 6.5 in / 3.81 x 45.72 x 16.51
Weight	3.5 lbs / 1.59 kg

Microsoft Intellimouse PS/2		
Dimensions	*U. S.*	*Metric*
Height Length Width	1.22 in 3.94 in 2.21 in	3.1 cm 10 cm 5.6 cm
Weight	2.9 oz	85 g
Base Resolution	400 DPI	
Tracking Speed (maximum)	10 in/sec	25 cm/sec
Temperature		
Operating Storage	32° F to 104° F -4° F to 140° F	0° C to 40° C -20° C to 60° C
Lifetime		
Mechanical Switch	Exceeds 300 miles Exceeds 1 million operations	Exceeds 483 km Exceeds 1 million operations
Relative Humidity	10% to 90%, noncondensing	
ESD	No soft errors through 6 kV; No hard errors through 6 kV; specific performance depends on host system	

Microsoft Intellimouse USB		
Dimensions	*U. S.*	*Metric*
Height Length Width	1.22 in 3.94 in 2.21 in	3.1 cm 10 cm 5.6 cm
Weight	2.9 oz	85 g
Base Resolution	400 DPI	
Tracking Speed (maximum)	10 in/sec	25 cm/sec
Temperature		
Operating Storage	32° F to 104° F -4° F to 140° F	0° C to 40° C -20° C to 60° C
Lifetime		
Mechanical Switch	Exceeds 300 miles Exceeds 1 million operations	Exceeds 483 km Exceeds 1 million operations
Relative Humidity	10% to 90%, noncondensing	
ESD	No soft errors through 6 kV; No hard errors through 6 kV; specific performance depends on host system	

Jumper & Switch Information

Connector Pin Assignments

Section Navigation:

- >System Unit
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- >Diskette Drive
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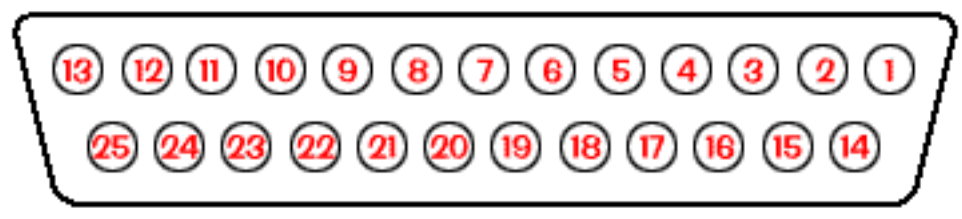
- >Pin Assignments

Click on a link:

Audio line out	Flat panel monitor	Mouse	Serial
Audio line in	Keyboard	Parallel	Speaker/headphone out
CD drive data cable	Microphone	Phone line to phone	USB
Fax/modem	MIDI/joystick	Phone line to wall jack	VGA monitor

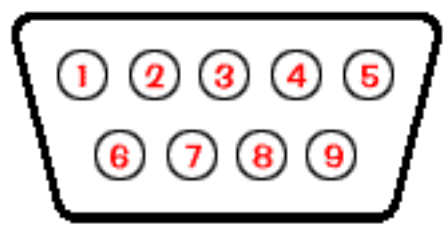
Parallel Connector



Pin	Signal	Pin	Signal	Pin	Signal
1	Strobe*	7	Data Bit 5	13	Select
2	Data Bit 0	8	Data Bit 6	14	Auto Linefeed*
3	Data Bit 1	9	Data Bit 7	15	Error*
4	Data Bit 2	10	Acknowledge*	16	Initialize Printer*
5	Data Bit 3	11	Busy	17	Select In*
6	Data Bit 4	12	Paper Out	18-25	Signal Ground

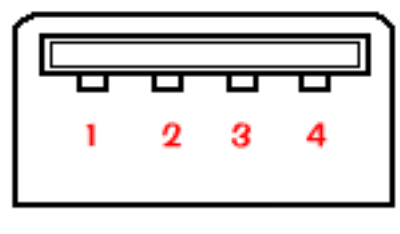
** Active low*

Serial Connector



Pin	Signal
1	Carrier Detect
2	Receive Data
3	Transmit Data
4	Data Terminal Ready
5	Signal Ground
6	Data Set Ready
7	Ready to Send
8	Clear to Send
9	Ring Indicator

Universal Serial Bus



Pin	Signal
1	- Data
2	+Data
3	Ground
4	+5 VDC

Keyboard & Mouse

Pin	Signal
1	Data
2	Unused
3	Ground
4	+5 VDC
5	Clock
6	Unused

Jumper & Switch Information

Connector Pin Assignments

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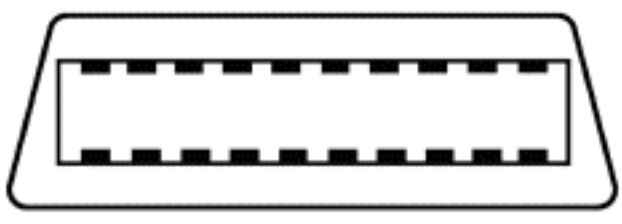
Click on a link:

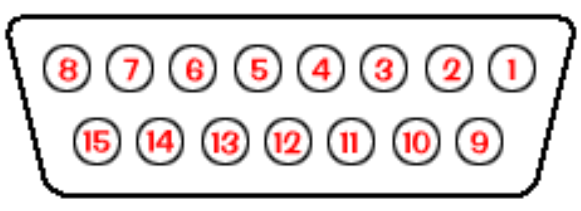
Audio line out	Flat panel monitor	Mouse	Serial
Audio line in	Keyboard	Parallel	Speaker/headphone out
CD drive data cable	Microphone	Phone line to phone	USB
Fax/modem	MIDI/joystick	Phone line to wall jack	VGA monitor

Flat-panel monitor



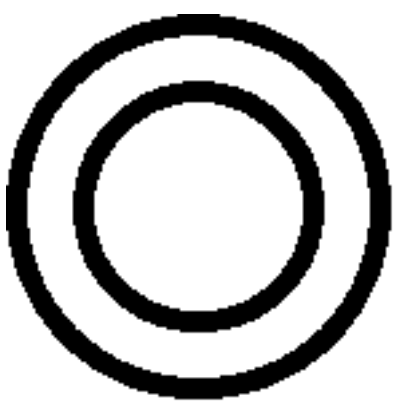
Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	TX2+	6	TXC+	11	TX2-	16	TXC-
2	Ground	7	Logic ground	12	Ground	17	+5VDC
3	TX1+	8	DDC data (SDA)	13	TX1-	18	DDC Clock (SCL)
4	TX0+	9	Reserved	14	TX0-	19	Reserved
5	Ground	10	Reserved	15	Ground	20	Reserved

MIDI/Joystick



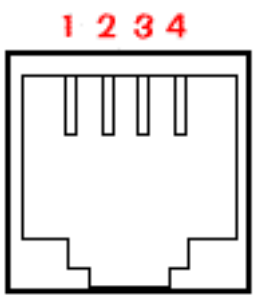
Pin	Signal	Pin	Signal	Pin	Signal
1	+5 VDC	6	Y-Axis (1)	11	X-Axis (2)
2	Fire A (1)	7	Fire B (1)	12	MIDI Out
3	X-Axis (1)	8	+5 VDC	13	Y-Axis (2)
4	Ground	9	+5 VDC	14	Fire B (2)
5	Ground	10	Fire A (2)	15	MIDI In

Line out, Line in, Speaker/Headphone Out, Microphone



Stereo 1/8" Miniphone

Phone Line to Wall Jack
Phone Line to Phone



Pin	Signal
1	Unused
2	Tip
3	Ring
4	Unused

Internal Fax/Modem

Pin	Signal	Pin	Signal	Pin	Signal
1	Unused	3	Ring	5	Unused
2	Unused	4	Tip	6	Unused

Jumper & Switch Information

Connector Pin Assignments

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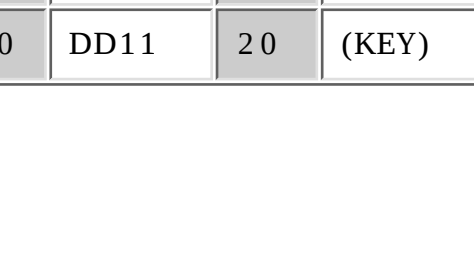
- >Power Supply
- >Modem/Fax
- >Mouse
- >Pin Assignments

Click on a link:

Audio line out	Flat panel monitor	Mouse	Serial
Audio line in	Keyboard	Parallel	Speaker/headphone out
CD drive data cable	Microphone	Phone line to phone	USB
Fax/modem	MIDI/joystick	Phone line to wall jack	VGA monitor

VGA Monitor



Pin	Signal	Pin	Signal
1	Red Analog	9	+5 VDC
2	Green Analog	10	Ground
3	Blue Analog	11	Volume Down
4	Volume Up	12	DDC Data
5	Ground	13	Horizontal Sync
6	Ground Analog	14	Vertical Sync
7	Ground Analog	15	DDC Clock
8	Ground Analog		

CD Drive Data Cable

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	RESET	11	DD3	21	DMARK	31	INTRQ
2	GND	12	DD12	22	GND	32	-IOCS16
3	DD7	13	DD2	23	-DIOW	33	DA0
4	DD8	14	DD13	24	GND	34	-PDIA6
5	DD6	15	DD1	25	-DIOR	35	DA0
6	DD9	16	DD14	26	GND	36	DAZ
7	DD5	17	DD0	27	IORDY	37	-CS1FX
8	DD10	18	DD15	28	SPSYNC	38	-CS3FX
9	DD4	19	GND	29	-DMACK	39	-DASP
10	DD11	20	(KEY)	30	GND	40	GNP

Specifications

System

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General system specifications
Video memory
System interrupts
System I/O (system function - shipping configuration)
System memory
System DMA

System I/O	
I/O Address (Hex)	System Function (Shipping Configuration)
x0000 - x000F Direct memory access controller x0010 - x001F Motherboard resources x0020 - x0021 Programmable interrupt controller x0022 - x003F Motherboard resources x0040 - x0043 System timer x0050 - x0052 Motherboard resources x0060 - x0060 Standard 101/102-Key or Microsoft Natural Keyboard x0061 - x0061 System speaker x0064 - x0064 Standard 101/102-Key or Microsoft Natural Keyboard x0070 - x0071 System CMOS/real time clock x0072 - x0077 Motherboard resources x0080 - x0090 Direct memory access controller x0091 - x0093 Motherboard resources x0094 - x009F Direct memory access controller x00A0 - x00A1 Programmable interrupt controller x00A2 - x00BE Motherboard resources x00C0 - x00DE Direct memory access controller x00F0 - x00FF Numeric data processor x0170 - x0177 Intel 82371AB/EB PCI Bus Master IDE Controller x0170 - x0177 Secondary IDE controller (dual fifo) x01F0 - x01F7 Intel 82371AB/EB PCI Bus Master IDE Controller x01F0 - x01F7 Primary IDE controller (dual fifo) x0200 - x0207 Creative Gameport Joystick x0220 - x022F Sound Blaster AudioPCI 128 Legacy Device x0290 - x0297 Motherboard resources x02F8 - x02FF Communications Port (COM2) x0330 - x033F Sound Blaster AudioPCI 128 Legacy Device x0370 - x0371 Motherboard resources x0376 - x0376 Intel 82371AB/EB PCI Bus Master IDE Controller	

x0376 - x0376 Secondary IDE controller (dual fifo)
x0378 - x037F Printer Port (LPT1)
x0388 - x038B Sound Blaster AudioPCI 128 Legacy Device
x03B0 - x03BB STB Velocity 4400/4000
x03C0 - x03DF STB Velocity 4400/4000
x03E8 - x03EF Rockwell HCF 56K Data Fax PCI Modem
x03F0 - x03F5 Standard Floppy Disk Controller
x03F6 - x03F6 Intel 82371AB/EB PCI Bus Master IDE Controller
x03F6 - x03F6 Primary IDE controller (dual fifo)
x03F8 - x03FF Communications Port (COM1)
x0400 - x043F Motherboard resources
x0440 - x044F Motherboard resources
x04D0 - x04D1 Motherboard resources
x0570 - x0577 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x0570 - x0577 Alias of Secondary IDE controller (dual fifo)
x05F0 - x05F7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x05F0 - x05F7 Alias of Primary IDE controller (dual fifo)
x0776 - x0776 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x0776 - x0776 Alias of Secondary IDE controller (dual fifo)
x07B0 - x07BB Alias of STB Velocity 4400/4000
x07C0 - x07DF Alias of STB Velocity 4400/4000
x07F6 - x07F6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x07F6 - x07F6 Alias of Primary IDE controller (dual fifo)
x0970 - x0977 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x0970 - x0977 Alias of Secondary IDE controller (dual fifo)
x09F0 - x09F7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x09F0 - x09F7 Alias of Primary IDE controller (dual fifo)
x0B76 - x0B76 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x0B76 - x0B76 Alias of Secondary IDE controller (dual fifo)
x0BB0 - x0BBB Alias of STB Velocity 4400/4000
x0BC0 - x0BDF Alias of STB Velocity 4400/4000
x0BF6 - x0BF6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x0BF6 - x0BF6 Alias of Primary IDE controller (dual fifo)
x0CF8 - x0CFF Motherboard resources
x0D70 - x0D77 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x0D70 - x0D77 Alias of Secondary IDE controller (dual fifo)
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x0FB0 - x0FBB Alias of STB Velocity 4400/4000
x0FC0 - x0FDF Alias of STB Velocity 4400/4000
x0FF6 - x0FF6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x1170 - x1177 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x1170 - x1177 Alias of Secondary IDE controller (dual fifo)
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x1376 - x1376 Alias of Secondary IDE controller (dual fifo)
x13B0 - x13BB Alias of STB Velocity 4400/4000
x13C0 - x13DF Alias of STB Velocity 4400/4000
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x1B76 - x1B76 Alias of Secondary IDE controller (dual fifo)
x1BB0 - x1BBB Alias of STB Velocity 4400/4000
x1BC0 - x1BDF Alias of STB Velocity 4400/4000
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x1BF6 - x1BF6 Alias of Primary IDE controller (dual fifo)
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x1DF0 - x1DF7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x1DF0 - x1DF7 Alias of Primary IDE controller (dual fifo)
x1F76 - x1F76 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x1F76 - x1F76 Alias of Secondary IDE controller (dual fifo)
x1FB0 - x1FBB Alias of STB Velocity 4400/4000
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x1FF6 - x1FF6 Alias of Primary IDE controller (dual fifo)
x2170 - x2177 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x2170 - x2177 Alias of Secondary IDE controller (dual fifo)
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x23C0 - x23DF Alias of STB Velocity 4400/4000
x23F6 - x23F6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x2570 - x2577 Alias of Secondary IDE controller (dual fifo)
x25F0 - x25F7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x25F0 - x25F7 Alias of Primary IDE controller (dual fifo)
x2776 - x2776 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x2776 - x2776 Alias of Secondary IDE controller (dual fifo)
x27B0 - x27BB Alias of STB Velocity 4400/4000
x27C0 - x27DF Alias of STB Velocity 4400/4000
x27F6 - x27F6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x2970 - x2977 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x2970 - x2977 Alias of Secondary IDE controller (dual fifo)
x29F0 - x29F7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x2B76 - x2B76 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller x2B76 - x2B76 Alias of Secondary IDE controller (dual fifo)
x2BB0 - x2BBB Alias of STB Velocity 4400/4000
x2BC0 - x2BDF Alias of STB Velocity 4400/4000
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x2D70 - x2D77 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x2D70 - x2D77 Alias of Secondary IDE controller (dual fifo)
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x2DF0 - x2DF7 Alias of Primary IDE controller (dual fifo)
x2F76 - x2F76 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x2F76 - x2F76 Alias of Secondary IDE controller (dual fifo)
x2FB0 - x2FBB Alias of STB Velocity 4400/4000
x2FC0 - x2FDF Alias of STB Velocity 4400/4000
x2FF6 - x2FF6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x2FF6 - x2FF6 Alias of Primary IDE controller (dual fifo)
x3170 - x3177 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x3170 - x3177 Alias of Secondary IDE controller (dual fifo)
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x31F0 - x31F7 Alias of Primary IDE controller (dual fifo)
x3376 - x3376 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x3376 - x3376 Alias of Secondary IDE controller (dual fifo)
x33B0 - x33BB Alias of STB Velocity 4400/4000
x33C0 - x33DF Alias of STB Velocity 4400/4000
x33F6 - x33F6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x3570 - x3577 Alias of Secondary IDE controller (dual fifo)
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x35F0 - x35F7 Alias of Primary IDE controller (dual fifo)
x3776 - x3776 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x3776 - x3776 Alias of Secondary IDE controller (dual fifo)
x37B0 - x37BB Alias of STB Velocity 4400/4000
x37C0 - x37DF Alias of STB Velocity 4400/4000
x37F6 - x37F6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x37F6 - x37F6 Alias of Primary IDE controller (dual fifo)
x3970 - x3977 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller x3970 - x3977 Alias of Secondary IDE controller (dual fifo)
x39F0 - x39F7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x39F0 - x39F7 Alias of Primary IDE controller (dual fifo)
x3B76 - x3B76 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x3B76 - x3B76 Alias of Secondary IDE controller (dual fifo)
x3BB0 - x3BBB Alias of STB Velocity 4400/4000
x3BC0 - x3BDF Alias of STB Velocity 4400/4000
x3BF6 - x3BF6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x3BF6 - x3BF6 Alias of Primary IDE controller (dual fifo)
x3D70 - x3D77 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x3D70 - x3D77 Alias of Secondary IDE controller (dual fifo)
x3DF0 - x3DF7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x3FB0 - x3FBB Alias of STB Velocity 4400/4000
x3FC0 - x3FDF Alias of STB Velocity 4400/4000
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x4170 - x4177 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x4170 - x4177 Alias of Secondary IDE controller (dual fifo)
x41F0 - x41F7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x41F0 - x41F7 Alias of Primary IDE controller (dual fifo)
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x4376 - x4376 Alias of Secondary IDE controller (dual fifo)
x43B0 - x43BB Alias of STB Velocity 4400/4000
x43C0 - x43DF Alias of STB Velocity 4400/4000
x43F6 - x43F6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x43F6 - x43F6 Alias of Primary IDE controller (dual fifo)
x4570 - x4577 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x4570 - x4577 Alias of Secondary IDE controller (dual fifo)
x45F0 - x45F7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x45F0 - x45F7 Alias of Primary IDE controller (dual fifo)
x4776 - x4776 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller x4776 - x4776 Alias of Secondary IDE controller (dual fifo)
x47B0 - x47BB Alias of STB Velocity 4400/4000
x47C0 - x47DF Alias of STB Velocity 4400/4000
x47F6 - x47F6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x4970 - x4977 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x49F0 - x49F7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x49F0 - x49F7 Alias of Primary IDE controller (dual fifo)
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x4BB0 - x4BBB Alias of STB Velocity 4400/4000
x4BC0 - x4BDF Alias of STB Velocity 4400/4000
x4BF6 - x4BF6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x4D70 - x4D77 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x4DF0 - x4DF7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x4DF0 - x4DF7 Alias of Primary IDE controller (dual fifo)
x4F76 - x4F76 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x4FB0 - x4FBB Alias of STB Velocity 4400/4000
x4FC0 - x4FDF Alias of STB Velocity 4400/4000
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x53F6 - x53F6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x55F0 - x55F7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x57B0 - x57BB Alias of STB Velocity 4400/4000
x57C0 - x57DF Alias of STB Velocity 4400/4000
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x57F6 - x57F6 Alias of Primary IDE controller (dual fifo)
x5970 - x5977 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x59F0 - x59F7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x59F0 - x59F7 Alias of Primary IDE controller (dual fifo)
x5B76 - x5B76 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x5BB0 - x5BBB Alias of STB Velocity 4400/4000
x5BC0 - x5BDF Alias of STB Velocity 4400/4000
x5BF6 - x5BF6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x5D70 - x5D77 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x5DF0 - x5DF7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x5FF6 - x5FF6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x5FF6 - x5FF6 Alias of Primary IDE controller (dual fifo)
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x63B0 - x63BB Alias of STB Velocity 4400/4000
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x6BB0 - x6BBB Alias of STB Velocity 4400/4000
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x6BF6 - x6BF6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x6D70 - x6D77 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x6FB0 - x6FBB Alias of STB Velocity 4400/4000
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x7170 - x7177 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller x7170 - x7177 Alias of Secondary IDE controller (dual fifo)
x71F0 - x71F7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x71F0 - x71F7 Alias of Primary IDE controller (dual fifo)
x7376 - x7376 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x7376 - x7376 Alias of Secondary IDE controller (dual fifo)
x73B0 - x73BB Alias of STB Velocity 4400/4000
x73C0 - x73DF Alias of STB Velocity 4400/4000
x73F6 - x73F6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x73F6 - x73F6 Alias of Primary IDE controller (dual fifo)
x7570 - x7577 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x7570 - x7577 Alias of Secondary IDE controller (dual fifo)
x75F0 - x75F7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x75F0 - x75F7 Alias of Primary IDE controller (dual fifo)

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Specifications

System Specifications

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System interrupts
System I/O (system function - shipping configuration)
System memory
System DMA

System Memory	
Memory Address	System Function
x00000000 - x0009FBFF	System board extension for PnP BIOS
x0009FC00 - x0009FFFF	System board extension for PnP BIOS
x000A0000 - x000AFFFF	STB Velocity 4400/4000
x000B0000 - x000BFFFF	STB Velocity 4400/4000
x000C0000 - x000C7FFF	STB Velocity 4400/4000
x000E0000 - x000FFFFF	System board extension for PnP BIOS
x00100000 - x03FDFFFF	System board extension for PnP BIOS
x03FE0000 - x03FF7FFF	System board extension for PnP BIOS
x03FF8000 - x03FFFFFF	System board extension for PnP BIOS
xF2800000 - xF48FFFFF	Intel 82443BX Pentium(r) II Processor to AGP controller
xF3000000 - xF3FFFFFF	STB Velocity 4400/4000
xF3000000 - xF3FFFFFF	STB Velocity 4400/4000
xF8000000 - xFBFFFFFF	Intel 82443BX Pentium(r) II Processor to PCI bridge (with GART support)
xFCA00000 - xFCA0FFFF	STB Velocity 4400/4000
xFCA00000 - xFEAFFFFF	Intel 82443BX Pentium(r) II Processor to AGP controller
xFD000000 - xFDFFFFFF	STB Velocity 4400/4000
xFEBF0000 - xFEBFFFFF	Rockwell PCI Modem Enumerator
xFEC00000 - xFEC00FFF	System board extension for PnP BIOS
xFEE00000 - xFEE00FFF	System board extension for PnP BIOS
xFFF80000 - xFFFFFFFF	System board extension for PnP BIOS

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System DMA	
Hardware	System Function (Default)
DMA 0	(free)
DMA 1	Sound Blaster AudioPCI 128 Legacy Device
DMA 2	Standard Floppy Disk Controller
DMA 3	(free)
DMA 4	Direct memory access controller
DMA 5	(free)
DMA 6	(free)
DMA 7	Sound Blaster AudioPCI 128 Legacy Device

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I/O Address (Hex)	System Function (Shipping Configuration)
	x7776 - x7776 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller x7776 - x7776 Alias of Secondary IDE controller (dual fifo) x77B0 - x77BB Alias of STB Velocity 4400/4000 x77C0 - x77DF Alias of STB Velocity 4400/4000 x77F6 - x77F6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller x77F6 - x77F6 Alias of Primary IDE controller (dual fifo) x7970 - x7977 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller x7970 - x7977 Alias of Secondary IDE controller (dual fifo) x79F0 - x79F7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller x79F0 - x79F7 Alias of Primary IDE controller (dual fifo) x7B76 - x7B76 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller x7B76 - x7B76 Alias of Secondary IDE controller (dual fifo) x7BB0 - x7BBB Alias of STB Velocity 4400/4000 x7BC0 - x7BDF Alias of STB Velocity 4400/4000 x7BF6 - x7BF6 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller x7BF6 - x7BF6 Alias of Primary IDE controller (dual fifo) x7D70 - x7D77 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller x7D70 - x7D77 Alias of Secondary IDE controller (dual fifo) x7DF0 - x7DF7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller

x7DF0 - x7DF7 Alias of Primary IDE controller (dual fifo)
x7F76 - x7F76 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
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x7FF6 - x7FF6 Alias of Primary IDE controller (dual fifo)
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x81F0 - x81F7 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x81F0 - x81F7 Alias of Primary IDE controller (dual fifo)
x8376 - x8376 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
x8376 - x8376 Alias of Secondary IDE controller (dual fifo)
x83B0 - x83BB Alias of STB Velocity 4400/4000
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xCFF6 - xCFF6 Alias of Primary IDE controller (dual fifo)
xD000 - xDFFF Intel 82443BX Pentium(r) II Processor to AGP controller
xD170 - xD177 Alias of Intel 82371AB/EB PCI Bus Master IDE Controller
xD170 - xD177 Alias of Secondary IDE controller (dual fifo)
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xFFA0 - xFFA7 Primary IDE controller (dual fifo)
xFFA0 - xFFAF Intel 82371AB/EB PCI Bus Master IDE Controller xFFA8 - xFFAF Secondary IDE controller (dual fifo)
xFFB0 - xFFBB Alias of STB Velocity 4400/4000
xFFC0 - xFFDF Alias of STB Velocity 4400/4000
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Troubleshooting

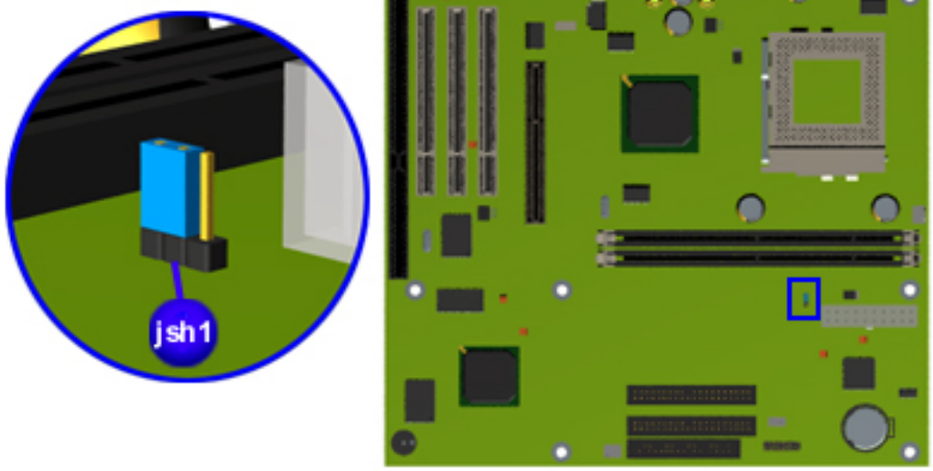
Clearing CMOS

If the power-on password is unknown, clearing CMOS ***will disable the password and allow the computer to be operated.***

Section Navigation:

- *>Clearing CMOS*
- *>Power-on Self-test*
- *>Configuration*
- *>Troubleshooting Without Diagnostics*
- *>Diagnostic Error Codes*

CMOS jumper location



1. Complete the preparation for disassembly procedures.
2. Remove the hood.
3. Remove the Power Supply.
4. To disable the password, move the jumper (JSH1) from pins 1-2 to pins 2-3 for 10 seconds, then return to pins 1-2.
5. Replace the system Power Supply and perform the desired troubleshooting.

Troubleshooting

Power-On Self Test (POST)

POST is a series of diagnostic tests that run automatically when the system is turned on. After the computer is turned on, ***POST*** checks the following assemblies to ensure that the computer system is properly functioning:

- Keyboard
- System board
- Memory modules
- Video memory
- Diskette drives
- Hard drive
- Power supply

POST also detects the type of mass storage devices installed in the computer.

If ***POST*** finds an error in the system, an error condition is indicated by an audible and/or visual message. The table below gives explanations of the error codes and a recommended course of action.

NOTE: An external speaker must be installed into the speaker output connector to hear audible beeps during ***POST***.

Click a link below to find the probable cause and recommended action for a given error message.

Diskette Drive A or B Error	Keyboard Controller Error	System BIOS Shadowed
Extended RAM failed at offset *nnn*	Keyboard Error	System Cache Error
Failing Bits *nnn*	Operating System Not Found	System CMOS Checksum Bad
Fixed Disk 0 or 1 Failure	Parity Check 1	System RAM Failed at Offset, *nnn*
Fixed Disk Controller Failure	Parity Check 2	System Timer Error
Incorrect Drive A Type	Real Time Clock Error	UMB Upper Limit Segment Address *nnn*
Invalid NVRAM Media Type	System Battery is Dead	Video BIOS Shadowed

POST Messages

Error message	Probable Cause	Recommended Action
Diskette Drive A or B Error	Drive A: or B: is present, but fails the BIOS POST diskette tests	1. Run Setup. 2. Replace the signal cables. 3. Replace the drive.
Extended RAM failed at offset *nnn*	Extended memory not working or not configured properly	1. Replace the memory modules. 2. Replace the system board.
Failing Bits *nnn*	*nnn* is a map of the bits at the RAM address which failed the memory test	1. Run Setup. 2. Replace the system board.
Fixed Disk 0 or 1 Failure	Hard drive is not working or not configured properly	1. Run Setup. 2. Replace the signal cable. 3. Replace the hard drive.
Fixed Disk Controller Failure	Hard drive is not working or not configured properly	1. Run Setup. 2. Replace the system board.
Incorrect Drive A Type	Type of diskette in drive A: not correctly identified	1. Run Setup. 2. Replace the diskette drive.
Invalid NVRAM Media Type	Problem with NVRAM (CMOS) access	Replace the system board.
Keyboard Controller Error	Keyboard, I/O keyboard controller (on system board), or mouse error	1. Replace the keyboard. 2. Replace the mouse. 3. Replace the system board.
Keyboard Error	Keyboard, I/O keyboard controller (on system board), or mouse error	1. Replace the keyboard. 2. Replace the mouse. 3. Replace the system board.
Operating System Not Found	Operating system cannot be located on either drive A: or C:	Run Setup.
Parity Check 1	Parity error found in the system bus	1. Run Setup. 2. Replace the memory modules. 3. Replace the system board.
Parity Check 2	Parity error found in the I/O bus	1. Run Setup. 2. Replace the ISA board (modem).
Real Time Clock Error	Real-time clock fails BIOS test	Replace the system board.
System Battery is Dead	RTC battery is dead	1. Replace the RTC battery. 2. Run Setup.
System BIOS Shadowed	System BIOS copied to Shadow RAM	Status message. No action required.
System Cache Error	RAM cache failed the BIOS test	Run Setup.
System CMOS Checksum Bad	CMOS is corrupted or modified incorrectly	Run Setup.
System RAM Failed at Offset, *nnn*	System RAM failed	Replace memory modules.
System Timer Error	DMA, timers, etc.	Replace the system board.
UMB Upper Limit Segment Address *nnn*	Displays the address *nnn* of the upper limit of Upper Memory Blocks, indicating released segments of the BIOS	Status message. No action required.
Video BIOS Shadowed	Video BIOS successfully copied to shadow RAM	Status message. No action required.

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Troubleshooting
Configuration

Section Navigation:
>Selecting CMOS
>Power-on Self-test
>Configuration
>Troubleshooting Without Diagnostics
>Diagnostic Error Codes

This section explains how to use Setup and Compaq Utilities which should be accessed in the following instances:

- When a system configuration error is detected during the Power-On Self-Test (POST)
- To change factory default settings for some of the computer features
- To change the system configuration, which is sometimes necessary when you add or remove optional hardware
- To set system configuration features

Click a link below to go to the appropratie subsection:

Preparing the Computer

Setup

Accessing Compaq Utilities Options

View System Information (INSPECT)

Preparing the Computer

If you encounter an error condition, complete the following steps before starting problem isolation procedures:

1. Ensure proper ventilation. The computer should have a 3-inch (7.6 cm) clearance at the back of the system unit.
2. Turn off the computer and peripheral devices.

△	CAUTION: Always ensure that the power is off before disconnecting or reconnecting the mouse, keyboard, or any other peripheral devices. Disconnecting or connecting the keyboard or mouse while the unit power is on can damage the system board.

3. Disconnect any peripheral devices other than the monitor and keyboard. Do not disconnect the printer if you want to test it or use it to log error messages.
4. Install loop-back and terminating plugs for complete testing.

Setup

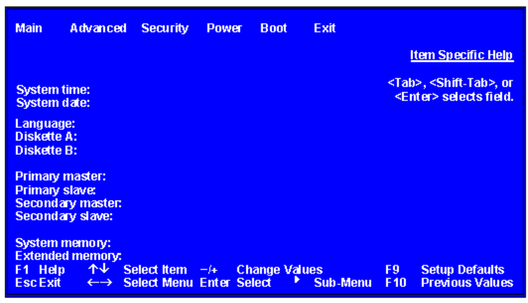
The Setup utility gives a snapshot of the computer's hardware configuration, aids in troubleshooting, and sets custom features. Setup recognizes a new internal component or an external device and automatically updates the configuration screens. Use the Setup utility to:

- Modify settings for audio, storage, power management, communications, and input devices
- Get an overall picture of the computer's hardware configuration
- Verify configuration parameters in determining problems
- Set time and date

Running Setup

To access the Setup utility, turn on the computer and press the F10 key when the Compaq logo appears. The following menu will appear:

NOTE:	The actual menu displayed on your computer may vary slightly, depending on your configuration.



Accessing Compaq Utilities Options

This section provides information about the menu options accessible from the Compaq Utilities menu.

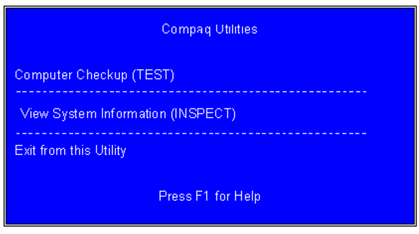
Create a Compaq Utilities Diskette

A Compaq Utilities diskette must be created to troubleshoot the system. To create a Compaq Utilities diskette, complete the following steps:

1. Insert the *QuickRestore CD* into the CD drive.
2. From the Windows desktop, click on Start, then Program, then Windows Explorer.
3. Click on the CD drive icon.
4. Double-click on the PCdiags folder.
5. Insert a diskette in the diskette drive.
6. Double-click on the QRST5.exe icon.
7. Press Enter when the QuickRestore label appears.
8. After the CD has completed copying to the diskette, eject the *QuickRestore CD*.

Running Compaq Utilities

To run Compaq Utilities, turn on or reboot the computer with the Compaq Utilities diskette in the diskette drive. The following menu will appear:



View System Information (INSPECT)

The View System Information (INSPECT) utility provides information about the system once it has been configured. INSPECT operates with MS-DOS and provides information about the system operating environment including:

- Contents of the operating system startup files
- Current memory configuration
- ROM version
- Type of processor and coprocessor
- Diskette and hard drives
- Active printer and communications interfaces
- Mode

Troubleshooting

Troubleshooting Without Diagnostics

Section Navigation:
>Clearing CMOS
>Power-on Solutions
>Configuration
>Troubleshooting Without Diagnostics
>Diagnostic Error Codes

This section describes some simple, preliminary tests and guidelines for troubleshooting the computer.

Checklist For Solving Minor Problems

If you encounter some minor problem with the computer or software application, go through the following checklist for possible solutions before running any of the diagnostic utilities:

- Is the computer connected to a working power outlet?
- Is the computer turned on and the power light illuminated?
- Are all cables connected properly and seated?
- Are all of the necessary device drivers installed?
- Is the *CONFIG.SYS* file correct?
- Is the *AUTOEXEC.BAT* file (MS-DOS) or *STARTUP.CMD* file correct?
- Was a nonbootable diskette loaded in the diskette drive at power-up?
- Are all switch settings correct?
- Was Computer Setup run after installing options (memory, disk drives, etc.) and before installing industry standard architecture boards?

Quick checks and possible solutions for problems related to these topics:

CD drive
diskette drive
USB ports
Processor
hard drive
hardware installation
power

are provided in the tables below. The procedure for resolving hardware conflicts is also described.

CD drive		
Problem	Probable cause(s)	Possible solution
Cannot read compact disc.	CD is not properly seated in the drive.	Eject the CD, press down on the CD firmly to correctly seat it in the drive, then reload.
	CD has been loaded upside down.	Eject the CD, turn it over, then reload.
	CD may be dirty or scratched.	Clean the CD or load another CD.
Cannot eject compact disc (tray-load only).	CD is not properly seated in the drive.	Turn off the computer, insert a straightened paper clip into the emergency eject hole, then push firmly. Slowly pull the tray out from the drive until the tray is fully extended, then remove the CD.
CD drive devices are not detected.	Power cycle delay.	After turning the computer off, wait 30 seconds before turning the computer on again.
	CD drive is not connected properly.	Open the computer and check to see that the drive cable is connected properly.
	Proper driver is not loaded	Restart the system and make sure the CD drive drivers are loaded.

Resolving Hardware Conflicts

Hardware conflicts occur when two or more peripheral devices attempt to use the same hardware resources. I/O addresses, interrupts, and DMA channels are the most common hardware resources used by peripheral devices. For example, the factory default settings for the MIDI port audio interface are:

Base I/O address	220H
MIDI Port Base I/O address	330H
Interrupt	IRQ 5
8-bit DMA	Channel 1

When different peripheral devices use the same hardware resources at the same time, the devices and/or the system may not function properly. You can resolve hardware conflicts by ensuring that no devices are configured to use the same hardware resources. These resources can either be dipswitch or jumper settings on the peripheral card or software configurable resources. The Computer Setup selection of your Compaq Utilities allows you to view and modify the settings for the peripheral devices factory installed in your system. Refer to the *User's Guide* for the particular peripheral cards you wish to install for information on how to view and select their settings.

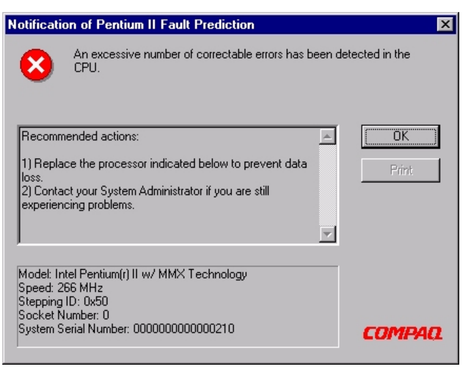
To resolve hardware conflicts:

1. Change the hardware settings of your audio card or other peripheral card in your system if the peripheral card is using any settings used by the factory-installed devices.
2. If you are unsure of the settings of the peripheral cards, you can isolate the source of the problem by temporarily removing all cards not maufactured by Compaq, or resetting the default settings and running Compaq Utilities. After that, add the cards back one at a time until the card that is causing the conflict is found.

Also see System

Processor

Your Processor may display the following error message, or one that looks similar to this:


Notification of Pentium II Fault Prediction
An excessive number of correctable errors has been detected in the CPU.
Recommended actions:
1) Replace the processor indicated below to prevent data loss.
2) Contact your System Administrator if you are still experiencing problems.
OK
Print
Model: Intel Pentium(r) II w/ MMX Technology
Speed: 266 MHz
Stepping ID: 0x50
Socket Number: 0
System Serial Number: 0000000000000210
COMPAQ

Celeron Processor Fault Prediction and Prefailure Warranty

When the processor encounters an excessive number of error checking and correcting (ECC) cache memory errors, the computer displays a Local Alert Message. This message contains detailed information about the faulty processor, allowing you to take action before you experience non-correctable cache memory errors. The Prefailure Warranty allows you to replace these processors, free of charge, before they actually fail. Processors with ECC cache memory are available on select Compaq personal computers.

Troubleshooting

Diagnostic Error Codes

Section Navigation:

- >Clearing CMOS
- >Power-on Self-test
- >Configuration
- >Troubleshooting Without Diagnostics
- >Diagnostic Error Codes

Diagnostic error codes occur if the system recognizes a problem while running the Compaq Utilities program. These error codes help identify possibly defective subassemblies.

Tables listed on this page give possible error codes, descriptions of each error condition, and actions required to resolve the error condition.

IMPORTANT: Retest the system after completing each step. If the problem has been resolved, do not proceed with the remaining steps.

For assistance in the removal and replacement of a particular subassembly, see *Removal and Replacement Procedures*.

100-xx	Processor	***800-xx***	Monochrome video		
200-xx	Memory	***1100-xx***	Serial	***3200-xx***	Audio
300-xx	Keyboard	***1200-xx***	Modem	***3300-xx***	CD
400-xx	Parallel (printer)	***1700-xx***	Hard drive	***6600-xx***	CD
500-xx	Monitor	***1900-xx***	Tape drive	***8600-xx***	Pointing device interface
600-xx	Diskette drive	***2400-xx***	Video		

Keyboard error codes

Error Code	Description	Recommended Action
301-xx	Keyboard short test, 8042 self-test failed	The following steps apply to error codes 301-xx through 304-xx: 1 Check the keyboard connection. If disconnected, turn the computer off and connect the keyboard. 2 Replace the keyboard and retest. 3 Replace the system board and retest.
302-xx	Keyboard long test failed	
303-xx	Keyboard LED test, 8042 self-test failed	
304-xx	Keyboard typematic test failed	

Parallel (printer) error codes

Error Code	Description	Recommended Action
401-xx	Printer failed or not connected	The following steps apply to error codes 401-xx through 498-xx: 1 Connect the printer. 2 Check power to the printer. 3 Install the loop-back connector and retest. 4 Replace system board and retest.
402-xx	Printer data register failed	
403-xx	Printer pattern test failed	
498-xx	Printer failed or not connected	

Monochrome video error codes

Error Code	Description	Recommended Action
802-xx	Video memory test failed	The following step applies to error codes 802-xx through 824-xx: Replace the system board and retest.
824-xx	Monochrome video text mode test failed	

Serial error codes

Error Code	Description	Recommended Action
1101-xx	Serial Port Test	The following steps apply to error codes 1101-xx through 1109-xx: 1 Check the switch settings on the serial/parallel device, if applicable. 2 Replace the system board and retest.
1109-xx	Clock Register Test	

Modem error codes

Error Code	Description	Recommended Action
1201-xx	Modem Internal Loop-Back Test	The following steps apply to error codes 1201-xx through 1210-xx: 1 Refer to modem documentation for correct Setup procedures. 2 Check the modem line. 3 Replace the modem and retest.
1202-xx	Modem Time-Out Error	
1203-xx	Modem External Termination Test	
1204-xx	Modem Auto Originate Test	
1206-xx	Dial Multifrequency Tone Test	
1210-xx	Modem Direct Connect Test	

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Troubleshooting

Diagnostic Error Codes

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200-xx	Memory	1100-xx	Serial	3200-xx	Audio
300-xx	Keyboard	1200-xx	Modem	3300-xx	CD
400-xx	Parallel (printer)	1700-xx	Hard drive	6600-xx	CD
500-xx	Monitor	1900-xx	Tape drive	8600-xx	Pointing device interface
600-xx	Diskette drive	2400-xx	Video		

Video error codes		
Error Code	Description	Recommended Action
2402-xx	Video memory test failed	The following steps apply to error codes 2402-xx through 2456-xx: 1 Run Setup. 2 Replace the system board and retest.
2403-xx	Video attribute test failed	
2404-xx	Video character set test failed	
2405-xx	Video 80 × 25 mode 9 × 14 character cell test failed	
2406-xx	Video 80 × 25 mode 8 × 8 character cell test failed	
2407-xx	Video 40 × 25 mode test failed	
2408-xx	Video 320 × 200 mode color set 0 test failed	

2409-xx	Video 320 × 200 mode color set 1 test failed	
2410-xx	Video 640 × 200 mode test failed	
2411-xx	Video screen memory page test failed	
2412-xx	Video gray scale test failed	
2414-xx	Video white screen test failed	
2416-xx	Video noise pattern test failed	
2418-xx	ECG/VGC memory test failed	
2419-xx	ECG/VGC ROM checksum test failed	
2420-xx	ECG/VGC attribute test failed	
2421-xx	ECG/VGC 640 × 200 graphics mode test failed	
2422-xx	ECG/VGC 640 × 350 16-color set test failed	
2423-xx	ECG/VGC 640 × 350 64-color set test failed	
2424-xx	ECG/VGC monochrome text mode test failed	
2425-xx	640 × 480 graphics test failure	
2431-xx	640 × 480 graphics test failure	
2432-xx	320 × 200 graphics (256-color mode) test failed	
2448-xx	Advanced VGA Controller test failed	
2451-xx	132-column Advance VGA test failed	
2456-xx	Advanced VGA 256-Color test failed	
2468-xx	Advanced VGA BitBLT test	The following steps apply to error codes 2468-xx through 2480-xx: 1 Run Setup. 2 Replace the system board and retest.
2477-xx	Advanced VGA datapath test	
2478-xx	Advanced VGA BitBLT test	
2480-xx	Advanced VGA Linedraw test	

Processor error codes		
Error code	Description	Recommended action
101-xx	CPU test failed	Replace the system board and retest.
102-xx	Processor error	1. Run Computer Checkup or Setup and retest. 2. Replace the processor and retest.
103-xx	DMA controller failed	The following step applies to error codes 103-xx through 106-xx: Replace the system board and retest.
104-xx	Interrupt controller failed	
105-xx	Port error	
106-xx	Keyboard controller self-test failed	
107-xx	CMOS RAM test failed	The following steps apply to error codes 107-xx through 109-xx: 1. Replace the battery/clock module and retest. 2. Replace the system board and retest.
108-xx	CMOS interrupt test failed	
109-xx	CMOS clock test failed	
110-xx	Programmable timer test failed	The following step applies to error codes 110-xx through 113-xx: Replace the system board and retest.
111-xx	Refresh detect test failed	
112-xx	Speed test failed	
113-01	Protected mode test failed	
114-xx	Speaker test failed	1. Verify the speaker connection. 2. Replace the system board and retest.
199-xx	Installed devices test failed	1. Check system configuration. 2. Verify cable connections. 3. Check switch settings. 4. Run Compaq Utilities. 5. Replace the system board and retest.

Monitor (VGA or flat-panel) error codes		
Error Code	Description	Recommended Action
501-xx	Video controller test failed	The following step applies to error codes 501-xx through 516-xx: Replace the system board and retest.
502-xx	Video memory test failed	
503-xx	Video attribute test failed	
504-xx	Video character set test failed	
505-xx	Video 80 × 25 mode 9 × 14 character cell test failed	
506-xx	Video 80 × 25 mode 9 × 14 character cell test failed	
507-xx	Video 40 × 25 mode test failed	
508-xx	Video 320 × 200 mode color set 0 test failed	
509-xx	Video 320 × 200 mode color set 1 test failed	
510-xx	Video 640 × 200 mode test failed	
511-xx	Video screen memory page test failed	
512-xx	Video gray scale test failed	
514-xx	Video white screen test failed	
516-xx	Video noise pattern test failed	

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Troubleshooting

Diagnostic Error Codes

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- >Power-on Self-test
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- >Diagnostic Error Codes

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200-xx	Memory	1100-xx	Serial	3200-xx	Audio
300-xx	Keyboard	1200-xx	Modem	3300-xx	CD
400-xx	Parallel (printer)	1700-xx	Hard drive	6600-xx	CD
500-xx	Monitor	1900-xx	Tape drive	8600-xx	Pointing device interface
600-xx	Diskette drive	2400-xx	Video		

Memory error codes		
Error Code	Description	Recommended Action
200-xx	Invalid memory configuration	1. Verify memory module value compatibility. 2. Reinsert memory in the correct location.
201-xx	Memory machine ID test failed	The following steps apply to error codes 201-xx and 202-xx: 1 Flash the ROM and retest. 2 Replace the memory and retest. 3 Replace the system board and retest.
202-xx	Memory system ROM checksum failed	
203-xx	Memory write/read test failed	The following steps apply to error codes 203-xx through 210-xx: 1 Remove one memory module at a time until the error message stops. 2 Replace other removed modules one at a time, testing each to ensure the error does not return. 3 Replace the system board and retest.
204-xx	Memory address test failed	
206-xx	Increment pattern test failed	
210-xx	Random pattern test failed	

Diskette drive error codes		
Error Code	Description	Recommended Action
600-xx	Diskette ID drive types test failed	The following steps apply to error codes 600-xx through 698-xx: 1 Replace the diskette and retest. 2 Check and/or replace the diskette power and signal cables and retest. 3 Replace the diskette drive and retest. 4 Replace the system board and retest.
601-xx	Diskette format failed	
602-xx	Diskette read test failed	
603-xx	Diskette write, read, compare test failed	
604-xx	Diskette random seek test failed	
605-xx	Diskette ID media test failed	
606-xx	Diskette speed test failed	
607-xx	Diskette wrap test failed	
608-xx	Diskette write-protect test failed	
609-xx	Diskette reset controller test failed	
610-xx	Diskette change line test failed	
694-xx	Pin 34 is not cut on 360KB diskette drive	
697-xx	Diskette type error	
698-xx	Diskette drive speed not within limits	
699-xx	Diskette drive/media ID error	1. Replace media. 2. Run Setup.

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Troubleshooting

Diagnostic Error Codes

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- Beginning Steps
- Power-on Self-Test
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200-xx	Memory	***1100-xx***	Serial	***3200-xx***	Audio
300-xx	Keyboard	***1200-xx***	Modem	***3300-xx***	CD
400-xx	Parallel (printer)	***1700-xx***	Hard drive	***6600-xx***	CD
500-xx	Monitor	***1900-xx***	Tape drive	***8600-xx***	Pointing device interface
600-xx	Diskette drive	***2400-xx***	Video		

Hard drive error codes

Error Code	Description	Recommended Action
1700-xx	Hard drive ID types test failed	The following steps apply to error codes 1700-xx through 1799-xx: 1 Run Setup and verify drive type. 2 Replace the hard drive signal and power cables and retest. 3 Replace the hard drive and retest. 4 Replace the system board and retest.
1701-xx	Hard drive format test failed	
1702-xx	Hard drive read test failed	
1703-xx	Hard drive write/read/compare test failed	
1704-xx	Hard drive random seek test failed	
1705-xx	Hard drive controller test failed	
1706-xx	Hard drive ready test failed	
1707-xx	Hard drive recalibration test failed	
1708-xx	Hard drive format bad track test failed	
1709-xx	Hard drive reset controller test failed	
1710-xx	Hard drive park head test failed	
1714-xx	Hard drive file write test failed	
1715-xx	Hard drive head select test failed	
1716-xx	Hard drive conditional format test failed	
1717-xx	Hard drive ECC* test failed	
1719-xx	Hard drive power mode test failed	
1719-x	Hard drive power mode test failed	
1730-x	Fixed Disk 0 does not support DMA Mode	
1731-x	Fixed Disk 1 does not support DMA Mode	
1740-x	Fixed Disk 0 failed Set Block Mode command	
1741-x	Fixed Disk 1 failed Set Block Mode command	
1750-x	Fixed Disk 0 failed Identify command	
1751-x	Fixed Disk 1 failed Identify command	
1760-x	Fixed Disk 0 does not support Block Mode	
1761-x	Fixed Disk 1 does not support Block Mode	
1790-x	Disk 0 Configuration Error	
1792-x	Secondary Disk Controller Failure	
1799-xx	Invalid hard drive type failed	

***Error Correction Code**

Tape drive error codes

Error Code	Description	Recommended Action
1900-xx	Tape ID failed	The following steps apply to error codes 1900-xx through 1906-xx: 1 Replace the tape cartridge and retest. 2 Check and/or replace the signal cable and retest. 3 Replace the tape drive and retest. 4 Replace the system board and retest.
1901-xx	Tape servo write failed	
1902-xx	Tape format failed	
1903-xx	Tape drive sensor test failed	
1904-xx	Tape BOT/EOT test failed	
1905-xx	Tape read test failed	
1906-xx	Tape write/read/compare failed	

Pointing device interface error codes

Error Code	Description	Recommended Action
8601-xx	Pointing Device Interface test failed	1. Replace with a working pointing device and retest. 2. Replace the system board and retest.

Audio Error Codes

Error Code	Description	Recommended Action
3206-xx	Audio System Internal Error	Replace the system board and retest.

CD error codes

Error Code	Description	Recommended Action
3301-xx 3305-xx 66XX-xx	CD drive read test failed	The following steps apply to error codes 3301-xx through 3305-xx and 66XX-xx: 1 Replace the CD retest.* 2 Check the jumper settings on the CD drive. 3 Check and/or replace the power and signal cables and retest. 4 Replace the CD drive and retest. 5 Replace the backplane.

Boot to DOS (Command Prompt only) or Windows (Not Safe Mode). Press the CD drive eject button (located on the front bezel) to eject the CD and retest.

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Troubleshooting

Troubleshooting Without Diagnostics

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CD drive

diskette drive

USB ports

hard drive

hardware installation

power

Hard drive		
Problem	Probable cause(s)	Possible solution
Hard drive error occurs.	Hard disk has bad sectors or has failed.	Run *Computer Checkup* (TEST) and *Computer Setup*. Reformat the hard disk.
Drive not found.	Cable could be loose.	Check cable connections.
Disk transaction problem.	Either the directory structure is bad or there is a problem with a file.	From the desktop click on the Start menu. Choose *Program* → *Accessories* → *System Tools* → *Scandisk* to check for problems. If problems exist, run Scandisk and checkmark the "Automatically fix errors" box at the bottom to correct the problems. If a large number of lost allocation units is found, click on the Start menu. Choose *Program* → *Accessories* → *System Tools* → *Disk Defragmenter*.

Nonsystem disk message.	The system is trying to start from a diskette that is not bootable.	Remove the diskette from the diskette drive.
	The system is trying to start from the hard drive but the hard disk has been damaged.	Insert a bootable diskette into the diskette drive and restart the computer with Ctrl+Alt+Del.
	Diskette boot has been disabled in Computer Setup.	Run *Computer Setup* and enable diskette boot.
Hard drive operation seems slow OR Hard drive activity light is not on, or stays on without blinking.	The hard disk files may be fragmented.	From the desktop click on the Start menu. Choose *Program* → *Accessories* → *System Tools* → *Scandisk* to check for problems. If problems exist, run Scandisk and checkmark the "Automatically fix errors" box at the bottom to correct the problems. If a large number of lost allocation units is found, click on the Start menu. Choose *Program* → *Accessories* → *System Tools* → *Disk Defragmenter*.

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Hardware installation		
Problem	Probable cause(s)	Possible solutions
A new device is not recognized as part of the computer system.	When the system advised you of changes to the configuration, you did not save the changes.	Reboot the computer and follow the instructions for saving the changes.
	The system may not have automatically recognized the new device.	Run Computer Setup and identify the new device.

	The cables for the new external device are loose, or the power cables are unplugged.	Check all cables.
	The power switch for the new external device is not turned on.	Turn off the computer, turn on the external device, and then turn on the computer to integrate the new device with the computer.

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Power	
Problem	Possible Solution
Computer will not turn on.	Ensure that the computer is connected to a power source.
Computer does not automatically display the date and time.	The real-time clock (RTC) battery may need to be replaced. Click here for replacement procedures.
Computer does not beep during POST.	The speaker volume may have been turned down. Select the Volume option from the Control Panel and adjust the volume.
Computer powered off automatically.	The unit temperature may have been exceeded. Check the fan for function and blockage.

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USB		
Problem	Probable cause(s)	Possible solution
USB device does not work with the system.	The USB device and the system may use different USB architectures.	Ensure that the USB device and the system share the same USB architecture. (UHCI-compliant devices will only work with a UHCI-compliant system, and OHCI-compliant devices will only work with a OHCI-compliant system).

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Diskette Drive		
Problem	Probable cause(s)	Possible solution
Diskette drive light stays on.	Diskette may be damaged.	From the desktop click on the Start menu. Choose Program → Accessories → System Tools → Scandisk to check for problems.
	Diskette may be installed incorrectly.	Remove the diskette and reinsert.
	Software program may be damaged.	Check the program diskettes.
Diskette drive cannot write to a diskette.	Diskette is not formatted.	Format the diskette.
	Diskette is write-protected.	Either use another diskette that is not write-protected or disable the write protection on the diskette.
	Writing to the wrong drive.	Check the drive letter in your path statement.
	Not enough space is left on the diskette.	Use another diskette to write the information.
Diskette drive cannot read a diskette.	Diskette is not formatted.	Format the diskette.
	Using the wrong diskette type for the drive type.	Use a diskette that is compatible with the drive.
	Reading the wrong drive.	Check the drive letter in your path statement.
	Diskette drive has been disabled by *Computer Setup*.	Run *Computer Setup* and enable the diskette drive.

Return to the top.

Removal & Replacement

RTC Battery

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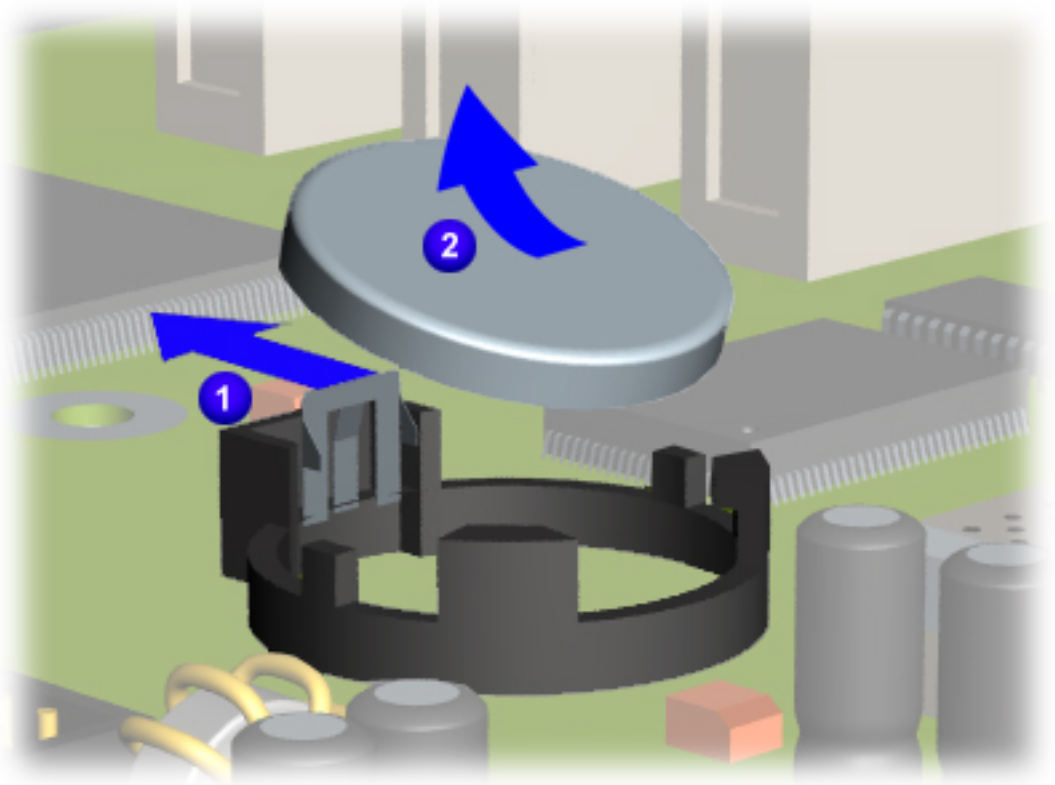


1 Perform preparation procedures.

2 Remove the hood.

3 Remove the diskette drive.

4 Locate the RTC battery (2).

5 Insert a non-conductive tool, such as a plastic rod, into the socket (1).

6 Using the inserted tool, push the RTC battery (2) back and out the socket.

To replace the RTC battery, reverse this procedure.

WARNING: The clock/CMOS lithium battery may explode if mistreated. Do not abuse. Use only replacement batteries supplied by Compaq Computer Corporation.

MAINTENANCE & SERVICE GUIDE

for Prosignia 320 Series Computer

Removal & Replacement

Preliminary Procedures

The following links are preliminary instructions which should be read before continuing with the Removal & Replacement section of this Guide. Please read the following pages before servicing your computer:

Electrostatic Discharge

Service Considerations

Preparing Computer for Disassembly

Revised: September 17th, 1999

Removal & Replacement

Electrostatic Discharge

A sudden discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry. Often the spark is neither felt nor heard, but damage occurs. An electronic device exposed to electrostatic discharge (ESD) may not be affected at all and will work perfectly throughout a normal cycle. Or it may function normally for a while, then degrade in the internal layers, reducing its life expectancy.

Networks built into many integrated circuits provide some protection, but in many cases, the discharge contains enough power to alter device parameters or melt silicon junctions.

Generating Static

The table below shows the different amounts of static electricity generated by different activities .

Relative Humidity			
Event	10%	40%	55%
Walking across carpet	35,000 V	15,000 V	7,500 V
Walking across vinyl floor	12,000 V	5,000 V	3,000 V
Motions of bench worker	6,000 V	800 V	400 V
Removing DIPS from plastic tubes	2,000 V	700 V	400 V
Removing DIPS from vinyl trays	11,500 V	4,000 V	2,000 V
Removing DIPS from Styrofoam	14,500 V	5,000 V	3,500 V
Removing bubble pack from PCBs	26,000 V	20,000 V	7,000 V
Packing PCBs in foam-lined box	21,000 V	11,000 V	5,000 V
NOTE: 700 volts can degrade a product!			

Preventing Electrostatic Damage to Equipment

Many electronic components are sensitive to ESD. Circuitry design and structure determine the degree of sensitivity. The following proper packaging and grounding precautions are necessary to prevent damage:

- Protect all electrostatic parts and assemblies with conductive or approved containers or packaging.
- Keep electrostatic sensitive parts in their containers until they arrive at static-free stations.
- Place items on a grounded surface before removing them from their container.
- Always be properly grounded when touching a sensitive component or assembly.
- Place reusable electrostatic-sensitive parts from assemblies in protective packaging or conductive foam.

Use transporters and conveyors made of antistatic belts and metal roller bushings. Mechanized equipment used for moving materials must be wired to ground and proper materials selected to avoid static charging. When grounding is not possible, use an ionizer to dissipate electric charges.

Preventing Damage to Drives

To prevent static damage to hard drives, use the following precautions:

- Handle drives gently, using static-guarding techniques.
- Store drives in the original shipping containers.
- Avoid dropping drives from any height onto any surface.
- Handle drives on surfaces that have at least one inch of shock-proof foam.
- Always place drives PCB assembly side down on the foam.

Grounding Methods

The method for grounding must include a wrist strap or a foot strap at a grounded workstation. When seated, wear a wrist strap connected to a grounded system. When standing, use footstraps and a grounded floor mat.

Static-Shielding Protection Levels			
Method	Antistatic Plastic	Carbon-Loaded Plastic	Metallized Laminate
Voltages	1,500	7,500	15,000

Grounding Workstations

To prevent static damage at the workstation, use the following precautions:

Cover the workstation with approved static-dissipative material. Provide a wrist strap connected to the work surface and properly grounded tools and equipment.

Use static-dissipative mats, heel straps, or air ionizers to give added protection.

Handle electrostatic sensitive components, parts, and assemblies by the case or PCB laminate. Handle them only at static-free workstations.

Avoid contact with pins, leads, or circuitry.

Turn off power and input signals before inserting and removing connectors or test equipment.

Use fixtures made of static-safe materials when fixtures must directly contact dissipative surfaces.

Keep work area free of nonconductive materials such as ordinary plastic assembly aids and Styrofoam.

Use field service tools, such as cutters, screwdrivers, and vacuums, that are conductive.

Use a portable field service kit with a static dissipative vinyl pouch that folds out of a work mat. Also use a wrist strap and a ground cord for the work surface. Ground the cord to the chassis of the equipment undergoing test or repair.

Grounding Equipment

Use the following equipment to prevent static electricity damage to the equipment:

Wrist Straps are flexible straps with a minimum of 1 megohm ±10% resistance to the ground cords. To provide proper ground, a strap must be worn snug against the skin. On grounded mats without banana-plug connectors, connect a wrist strap with alligator clips.

Heelstraps/Toestraps/Bootstraps can be used at standing workstations and are compatible with most types of boots and shoes. On conductive floors or dissipative floor mats, use them on both feet with a minimum of 1 megohm resistance between operator and ground. To be effective, the conductive strips must be worn in contact with the skin.

Recommended Materials and Equipment

Other materials and equipment that are recommended for use in preventing static electricity include:

Antistatic tape

Antistatic smocks, aprons, or sleeve protectors

Conductive bins, and other assembly or soldering aids

Conductive foam

Conductive tabletop workstations with ground cord of 1 megohm of resistance

Static dissipative table or floor mats with hard tie to ground

Field service kits

Static awareness labels

Wrist straps and footwear straps providing 1 megohm ±10% resistance

Material handling packages

Conductive plastic bags

Conductive plastic tubes

Conductive tote boxes

Metal tote boxes

Opaque shielding bags

Transparent metallized shielding bags

Transparent shielding tubes

Continue with Preliminary Procedures:

Service Considerations

Preparing Computer for Disassembly

Removal & Replacement

Service Considerations

Listed below are some of the considerations that should be kept in mind during the disassembly and assembly of the computer.

Tool Requirements

- Phillips screwdriver
- Needle-nose pliers
- Flat-bladed screwdriver
- Compaq Utilities software
- Plastic non-conductive rod

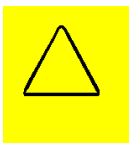
Screws

The screws used in these products are not interchangeable. If an incorrect screw is used during the reassembly process, it could cause damage to the unit. Compaq strongly recommends that all screws removed during the disassembly process be kept with the part that was removed, then returned to their proper locations.

IMPORTANT: As each subassembly is removed from the computer, it should be placed away from the work area to prevent damage.

Cables and Connectors

Most cables used throughout the unit are *ribbon cables*. These must be handled with extreme care to avoid damage. Apply only the tension required to seat or unseat the cables during insertion or removal from the connector. Handle cables by the connector whenever possible. In all cases, avoid bending, twisting, or tearing the cables, and ensure that they are placed in such a way that they cannot be caught or snagged by parts being removed or replaced.



CAUTION: When servicing these computers, ensure that cables are placed in their proper location during the reassembly process. Improper cable placement can cause severe damage to the unit.

Ribbon Cable Positions for:

CD drive
Diskette drive
Hard drive

Continue with Final Preliminary Procedure:

Preparing Computer for Disassembly

Removal & Replacement

CD Drive Cable Position

This cable goes behind the power supply and attaches to the system board.

Return to Service Considerations.

Removal & Replacement

Diskette Drive Cable Position

This cable goes behind the power supply and attaches to the system board:

Return to Service Considerations.

Removal & Replacement

Hard Drive Cable Position

The cable goes behind the power supply and attaches to the system board.

Return to Service Considerations.

Removal & Replacement

Preparation for Disassembly

To prepare the computer for removal and replacement procedures, complete the following steps:

1. Remove any diskette, compact disc, or tape from the computer.
2. Turn off the computer and any peripheral devices that are connected to the computer.

CAUTION: The computer power switch should be turned off before you disconnect any cables.

3. Disconnect the power cord from the electrical outlet, and then from the computer.
4. Disconnect all peripheral device cables from the computer.

IMPORTANT: During disassembly, label each cable as you remove it. Be sure to note its position and routing.

Go to Removal & Replacement Procedures.

Removal & Replacement

Serial Number Location

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The computer serial number should be provided to Compaq whenever requesting information or ordering spare parts. The serial number is located on the rear of the computer, below the power supply.

MAINTENANCE & SERVICE GUIDE

for Prosignia 320 Series Computer

Removal & Replacement

Chassis Hood

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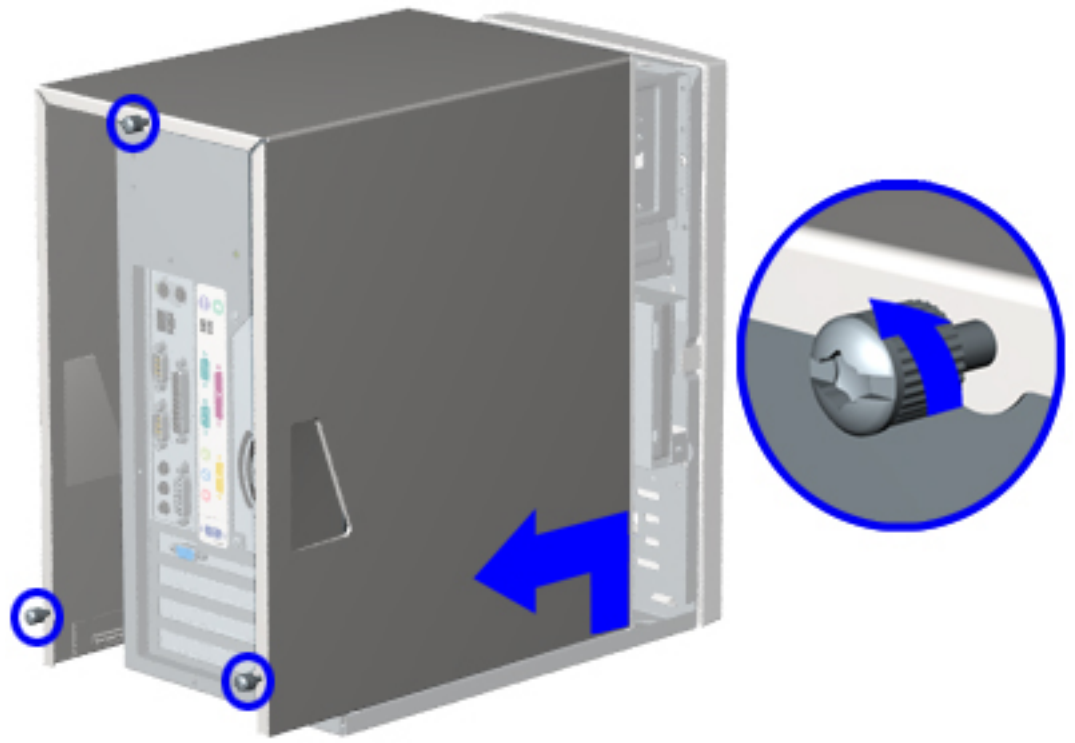

1 Perform the preparation procedures

2 Unscrew the three screws from the back of the computer.

NOTE: The Screws are stationary and will remain attatched to the hood.

3 Grasp the bottom of the hood, pull back slightly, and lift the hood off the computer

To replace the hood, reverse this procedure.

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Removal & Replacement

Power Supply

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>DIMM
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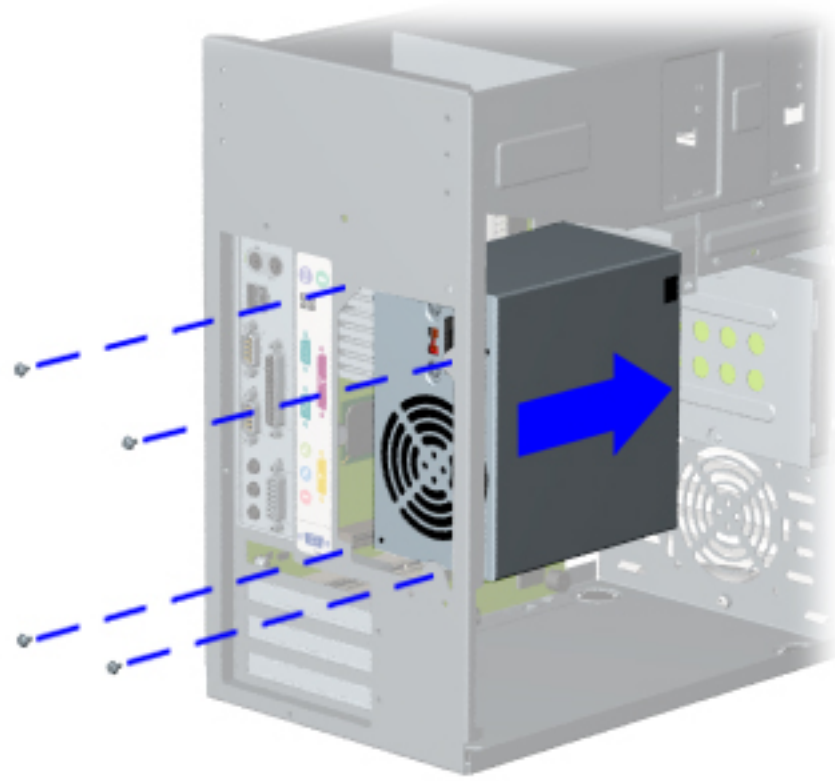

1 Perform preparation procedures
2 Remove the hood
3 Disconnect the power cables to these devices:
- 3.5" hard drive
- CD drive
- diskette drive
- system board

4 Remove the four screws that secure the power supply to the rear of the chassis
5 Slide the power supply towards the front of the computer and remove it from the chassis.

To replace the power supply, reverse this procedure.

Removal & Replacement

Mass Storage Devices Index Page

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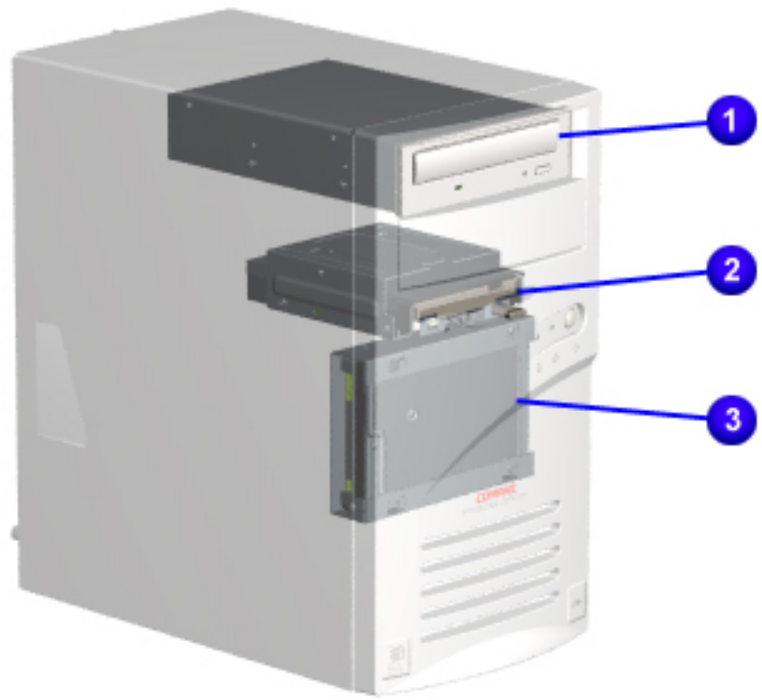

1 CD Drive

2 Diskette Drive

3 3.5" Hard Drive

Removal & Replacement

Removing the CD Drive

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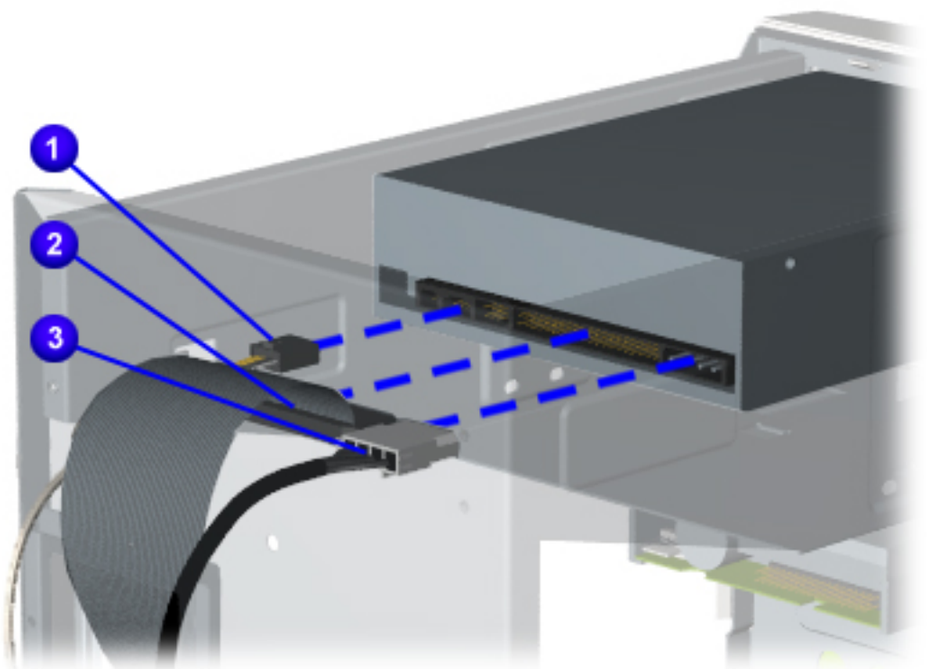

To remove the CD Drive complete the following *five* steps:

1. Perform preparation procedures.
2. Remove the hood.
3. Disconnect the signal 1, data 2, and power 3 cables from the CD drive.

NEXT STEP

NOTE: Click here to see how to remove a CD that has jammed in the drive.

Removal & Replacement

Diskette Drive

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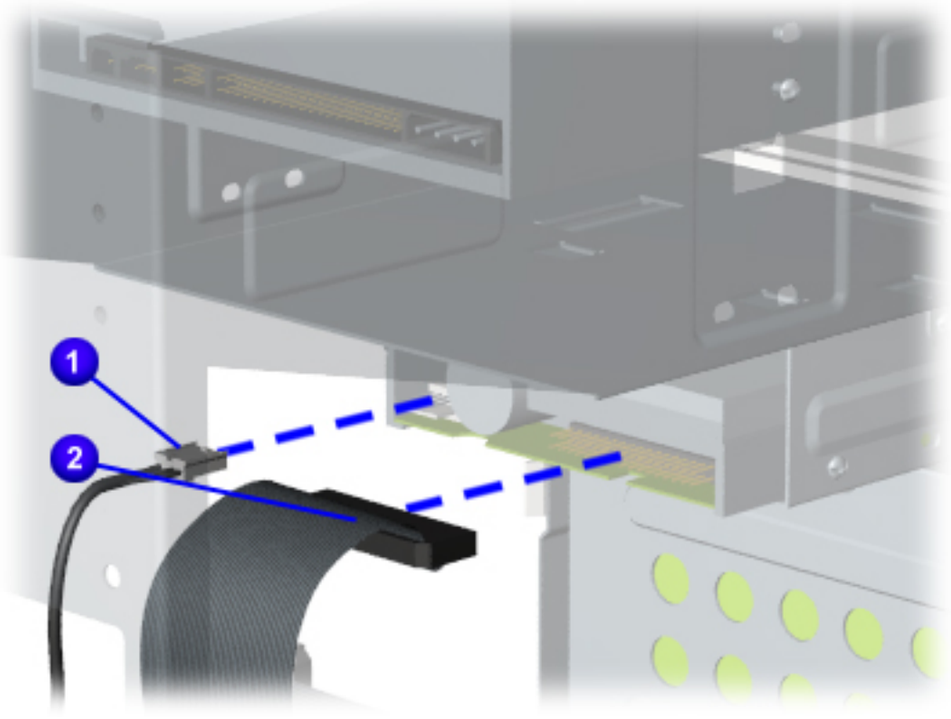

There are *seven* steps in this procedure.

1. Perform the preparation procedures.
2. Remove the hood.
3. Remove the power supply
4. Disconnect the power (1) and data (2) cables from the diskette drive.

NEXT STEP

Removal & Replacement

Hard Drive

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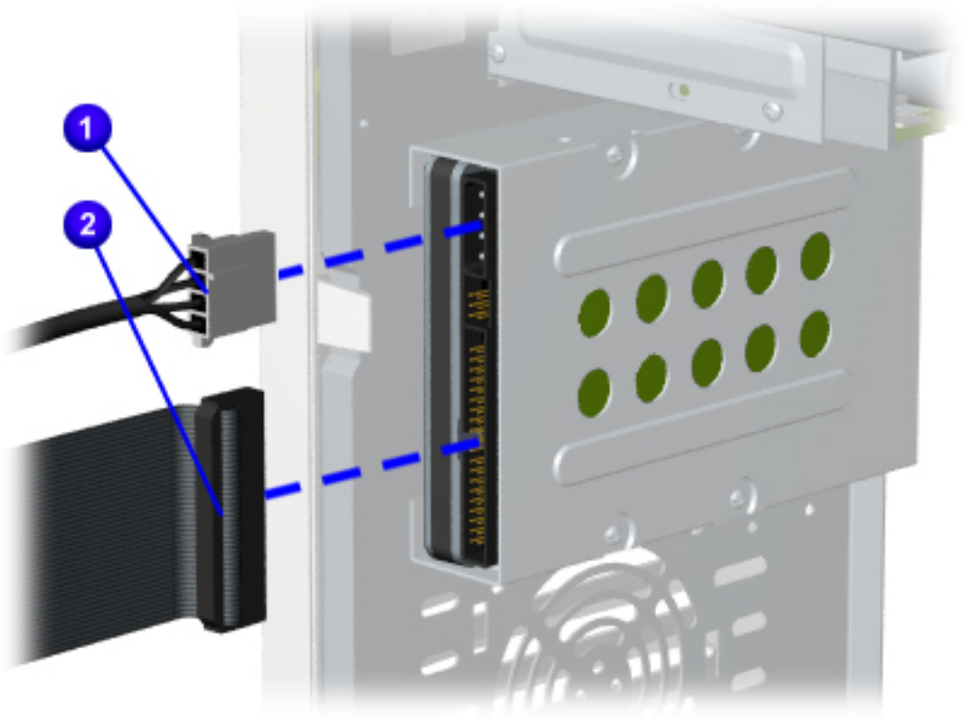

There are *six* steps in this procedure.

1. Perform preparation procedures
2. Remove the hood
3. Disconnect the power (1) and signal (2) cables from the hard drive

NEXT STEP

Removal & Replacement

Video Card

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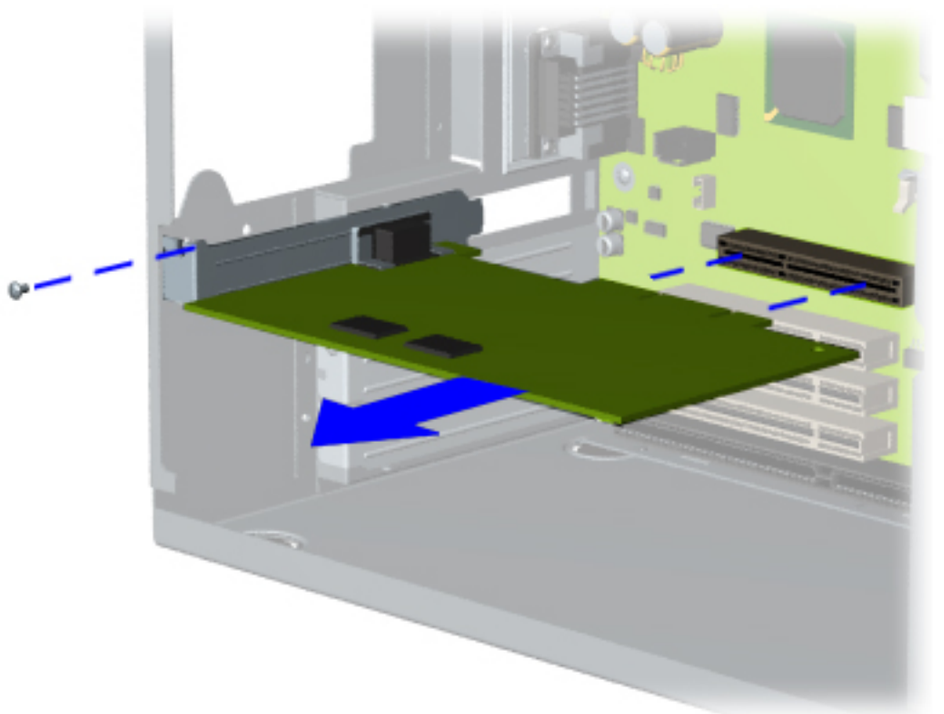

1. Perform preparation procedures.
2. Remove the hood.
3. Remove the screw holding the video card bracket to the chassis and pull the video card out of the slot.

To replace the video card, reverse this procedure.

Removal & Replacement

Network Card Removal

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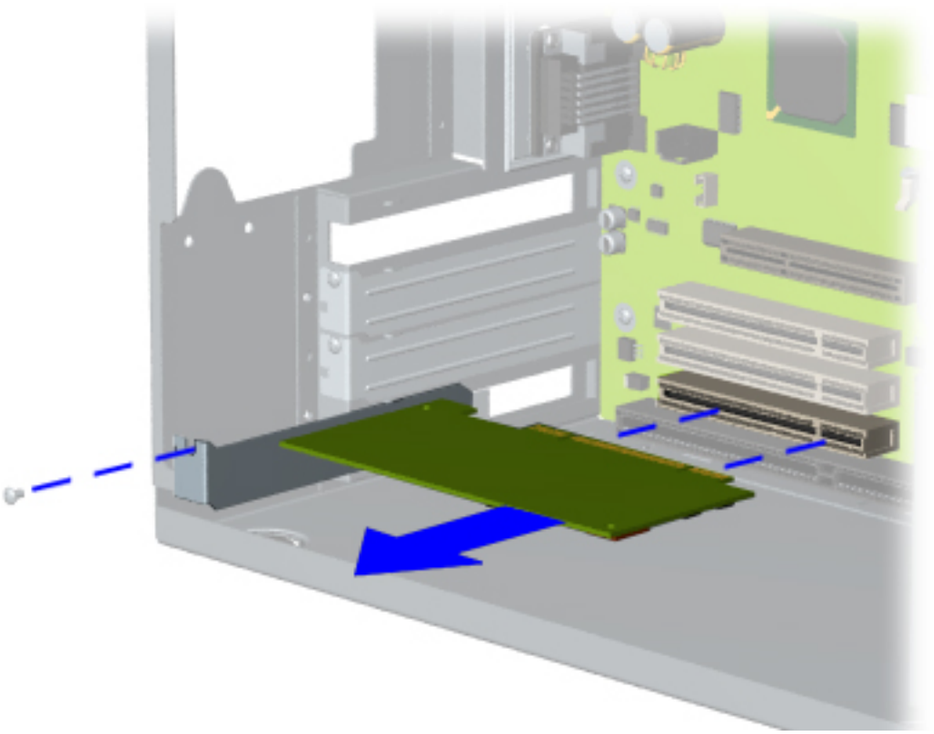

1. Perform preparation procedures.
2. Remove the hood.
3. Remove the screw holding the network card bracket to the chassis and pull the network card out of the slot.

To replace the Network card, reverse this procedure.

MAINTENANCE & SERVICE GUIDE

for Prosignia 320 Series Computer

Removal & Replacement

Modem/Fax Removal

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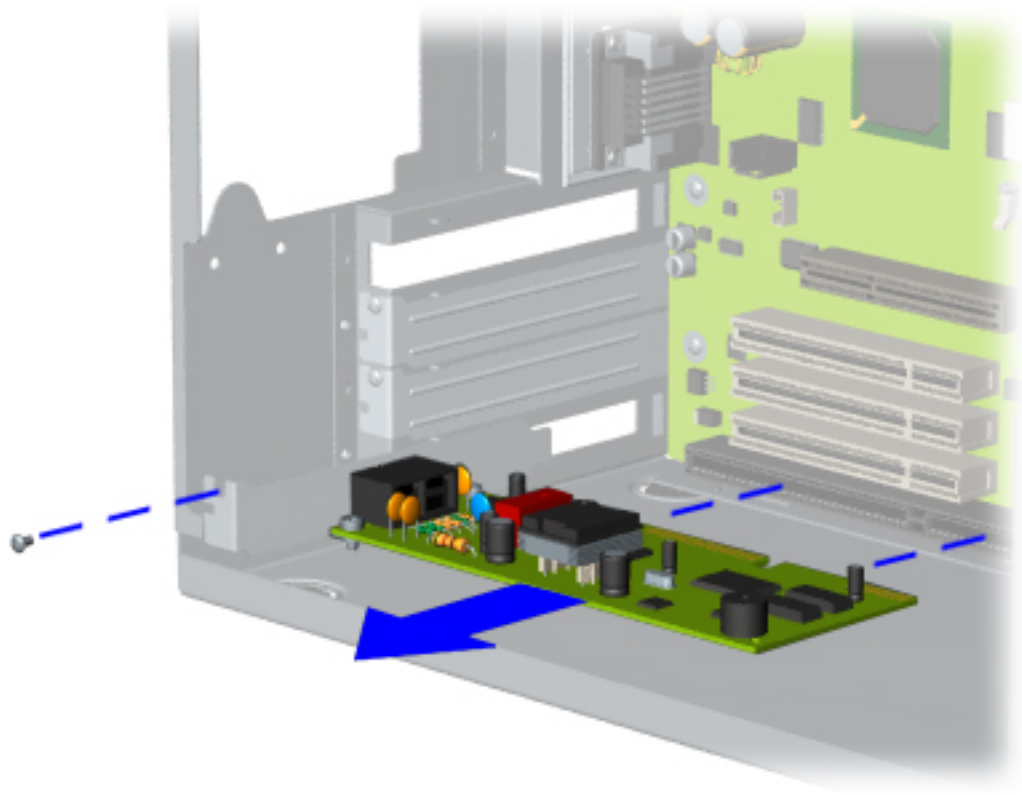

1 Perform preparation procedures.

2 Remove the hood.

3 Remove the screw holding the fax/modem bracket to the chassis and pull the fax/modem out of the slot.

To replace the fax/modem, reverse this procedure.

IMPORTANT: When replacing the fax/modem, download the latest software from SoftPaq. If QuickRestore is used, it may not have the 56K upgrade software included.

Removal & Replacement

Memory Module (DIMM)

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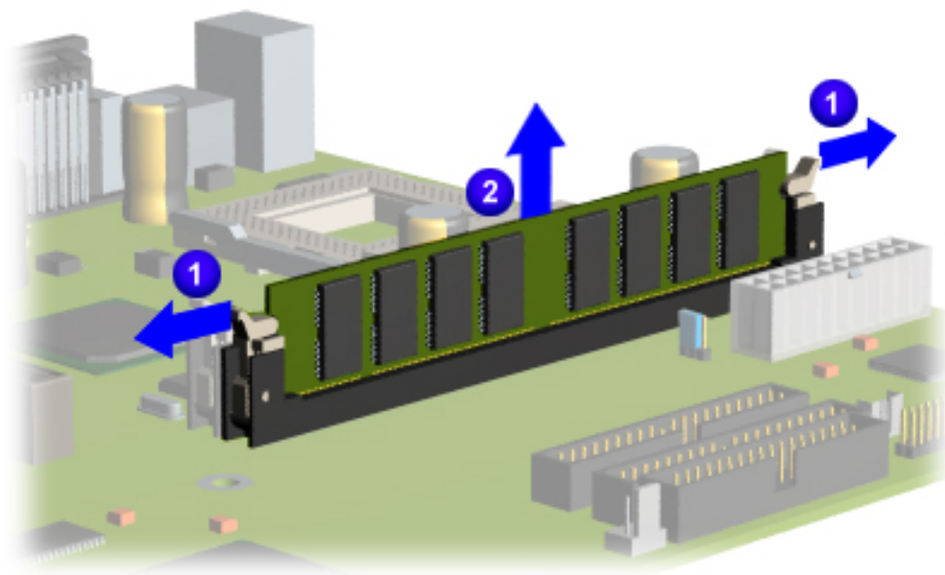

1 Perform preparation procedures.

2 Remove the hood.

3 Remove the Power Supply.

4 Release the end latches of the socket (1) and unplug the DIMM (2) from the system board.

To replace the DIMM, reverse this procedure.

Removal & Replacement

Processor Removal

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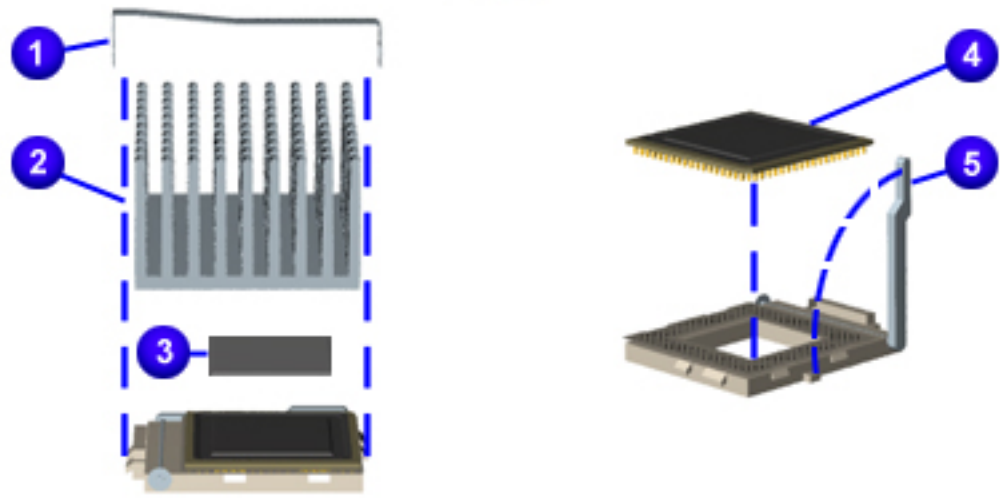

1 Perform preparation procedures.

2 Remove the hood.

3 Remove the power supply.

4 Locate the Celeron processor 4 on the system board--it is covered by the heatspreader 2.

5 Remove the clip 1 from the heatspreader.

6 Carefully remove the heatspreader from the top of the processor which is held on by an adhesive strip 3.

7 Lift the ZIF socket handle 5 away and up from the processor's socket.

8 Lift the processor out of the socket.

IMPORTANT:	Ensure that the processor is properly aligned in the goal posts before plugging it into the system board.

Removal & Replacement

Front Bezel

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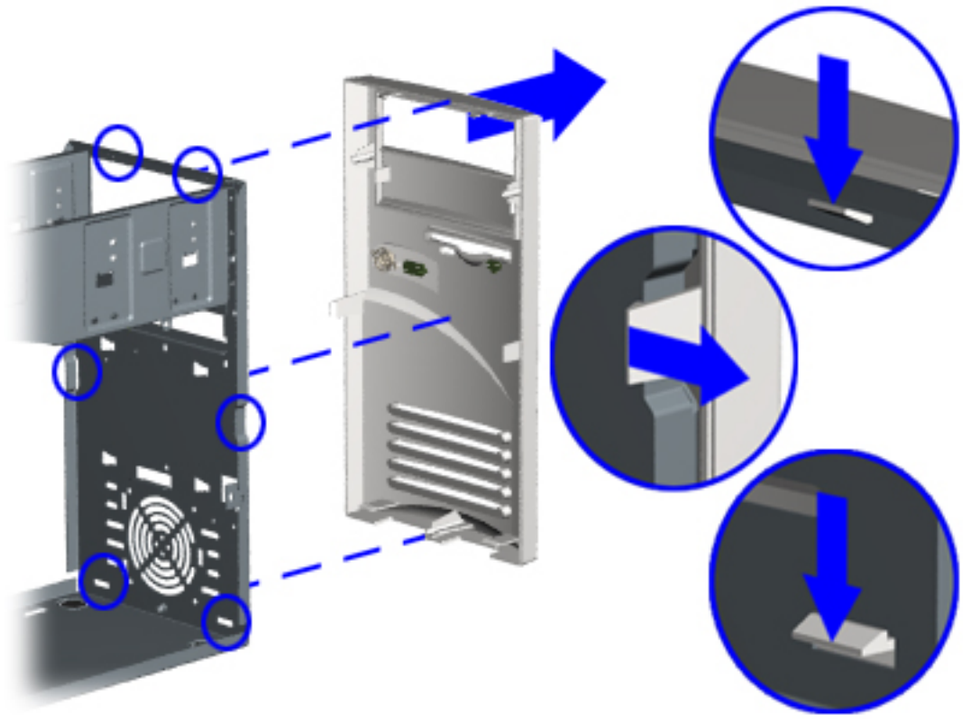

1. Perform preparation procedures
2. Remove the hood
3. Release the latches at the top, middle, and bottom of the front bezel, then remove the front bezel from the chassis.

To replace the front bezel, reverse this procedure.

Removal & Replacement

On-Button Board

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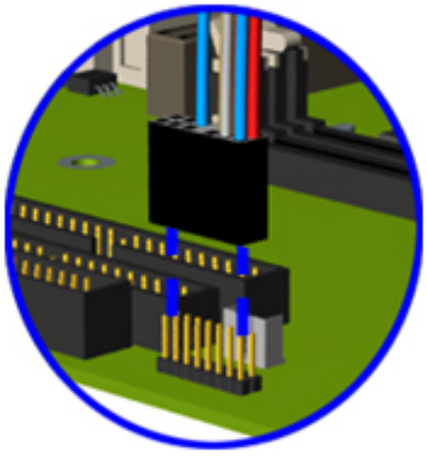

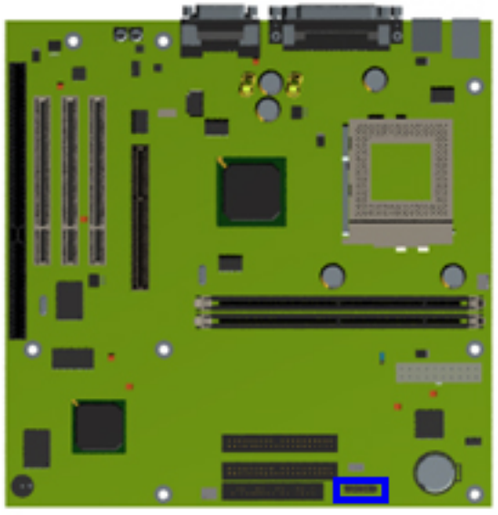

There are *five* Steps in this sequence.

1. Perform preparation procedures.
2. Remove thse hood.
3. Remove the front bezel
4. Locate & remove the On-button Board connector from the system board.

NEXT STEP

Removal & Replacement

System Board Bracket

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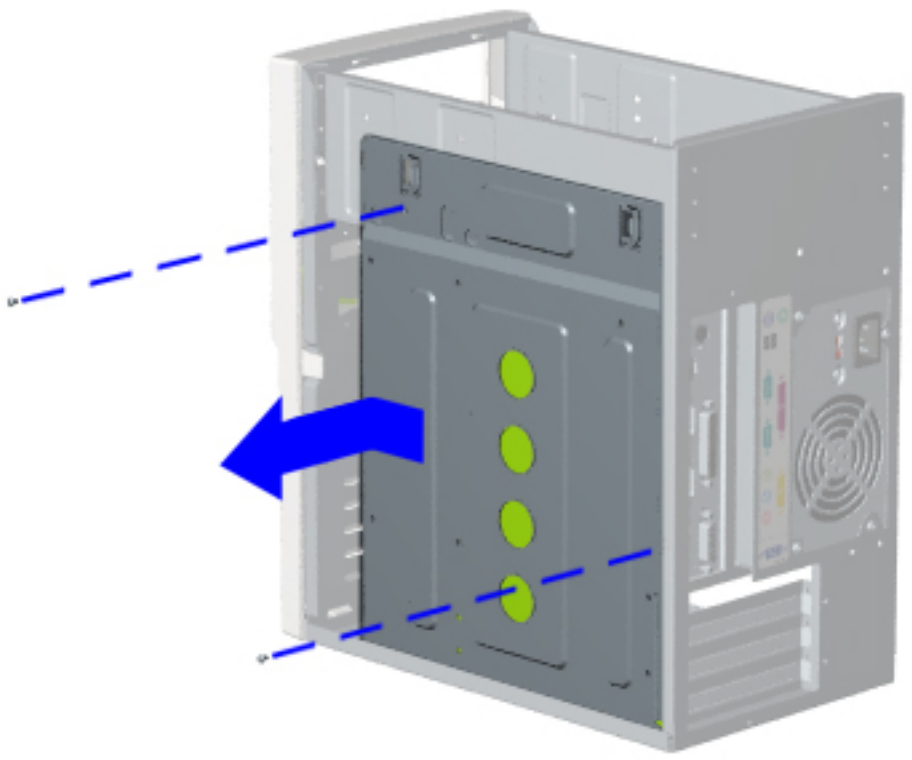

There are *ten* steps in this procedure.

1. Perform preparation procedures
2. Remove the hood
3. Remove the modem/fax card, network card, and video card.
4. Remove the screws from the top and the side of the system board bracket and chassis.
5. Push the system board bracket forward, towards the bezel, carefully removing the rear connectors from the I/O panel.

NEXT STEP

Removal & Replacement

System Board

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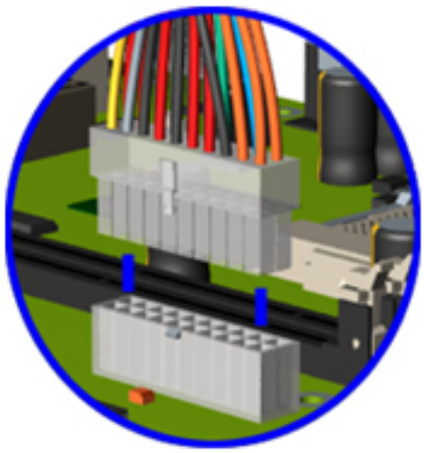
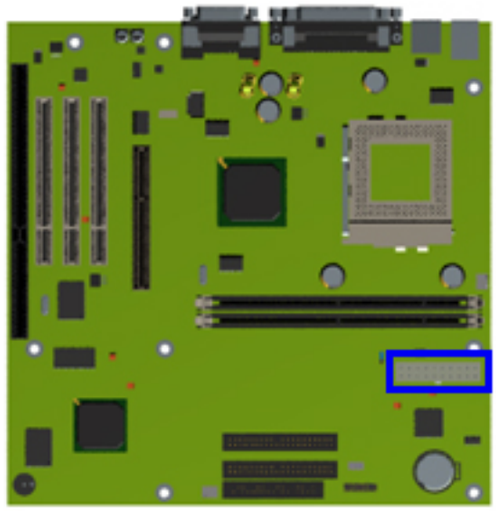
- >Power Supply
- >Drives Index
- >CD Drive
- >Diskette Drive
- >Hard Drive
- >Video Card
- >NIC Card
- >Modem/Fax
- >DIMM
- >RTC Battery
- >Processor
- >Front Bezel
- >On-Button Board
- >System Board Bracket
- >System Board
- >I/O Panel





There are *six* steps to this procedure.

1. Perform preparation procedures
2. Remove the hood
3. Remove the fax/modem, network card, and video card.
4. Remove the system board bracket
5. Remove the Power cable from the system board

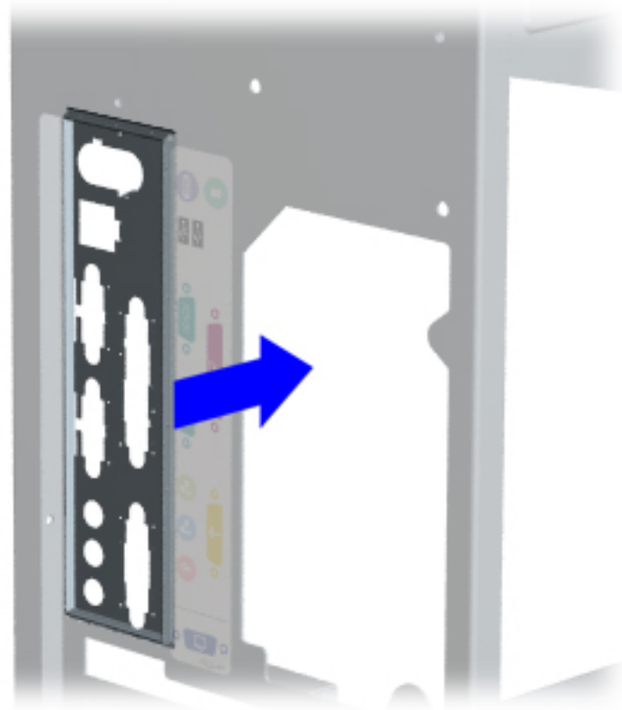
NEXT STEP

Removal & Replacement

I/O Panel

Section Navigation:

- >Preliminaries
- >Serial Number Location
- >Hood
- >Power Supply
- >Drives Index
- >CD Drive
- >Diskette Drive
- >Hard Drive
- >Video Card
- >NIC Card
- >Modem/Fax
- >DIMM
- >RTC Battery
- >Processor
- >Front Bezel
- >On-Button Board
- >System Board Bracket
- >System Board
- >I/O Panel

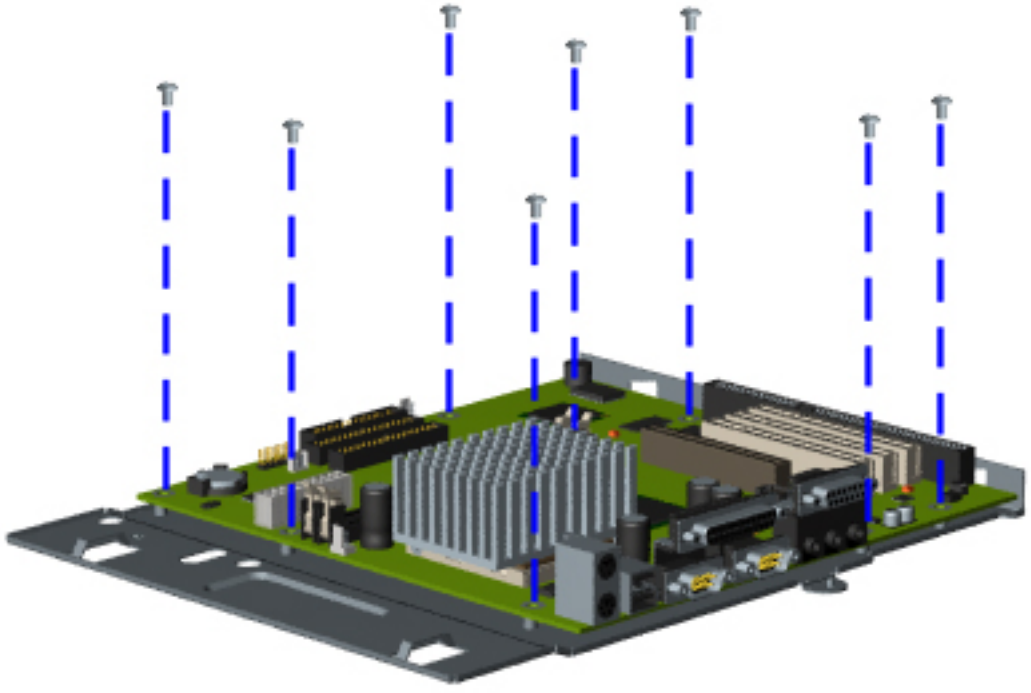


1. Perform preparation procedures
2. Remove the hood
3. Remove the system board bracket
4. Gently push the I/O panel into the chassis from the rear of the chassis and remove

To replace the I/O panel, reverse this procedure.

Removal & Replacement

System Board



6 Remove the Eight Screws that secure the System Board to the Bracket.

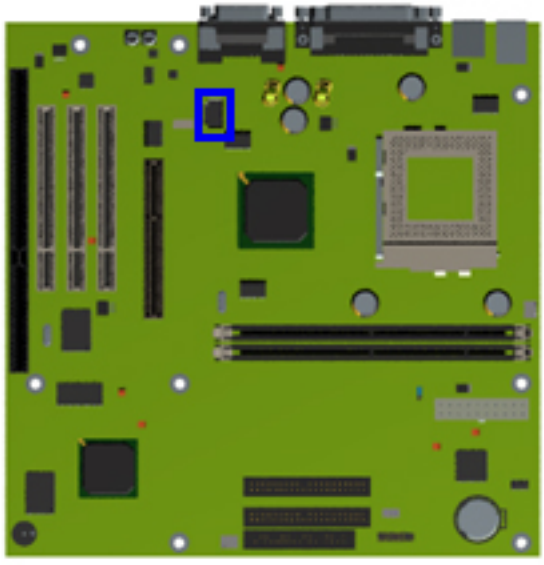
END OF SEQUENCE.

To replace the system board, reverse this procedure.

Return to Removal & Replacement Index Page.

Removal & Replacement

System Board Bracket

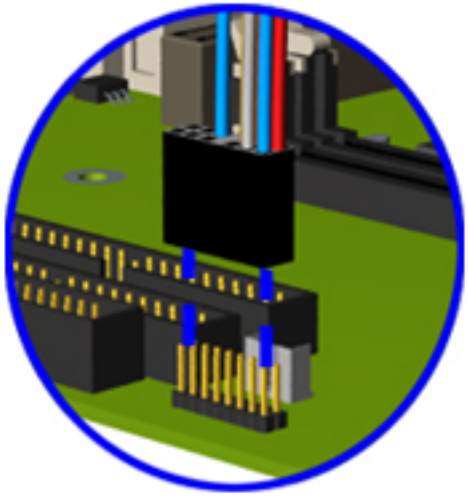


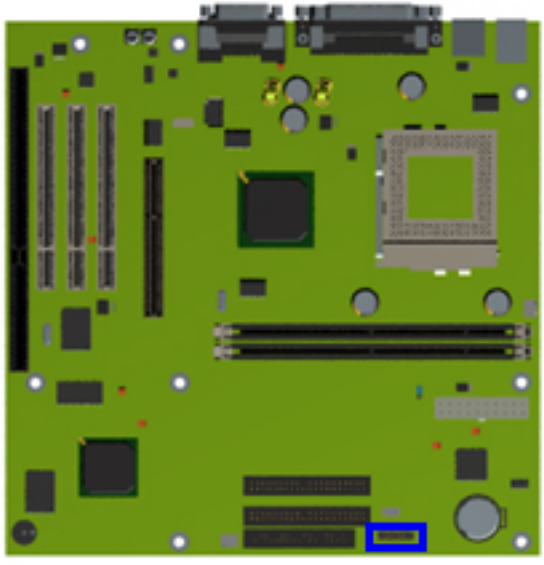
6 Disconnect the CD audio cable from the system board.

NEXT STEP

Removal & Replacement

System Board Bracket



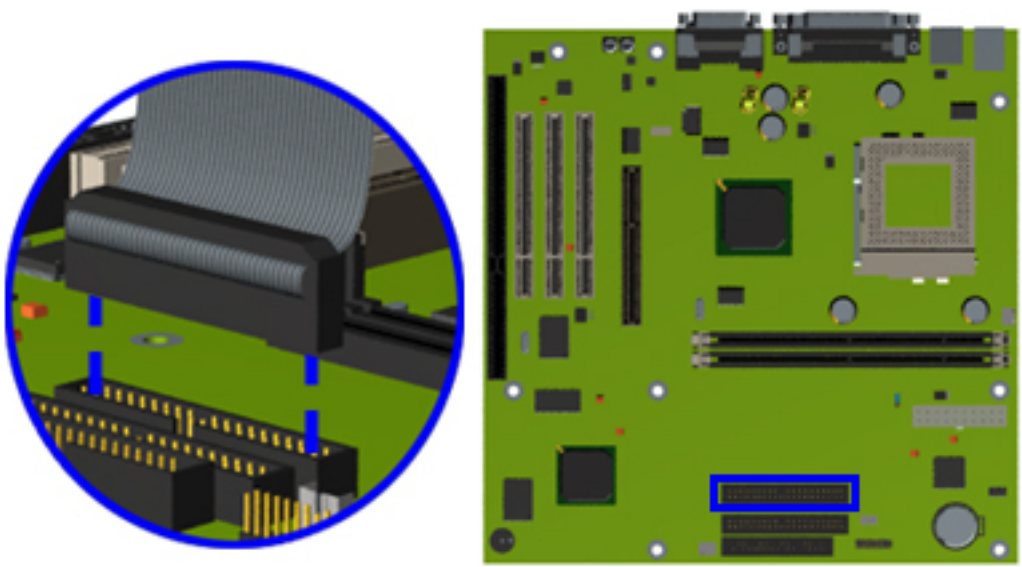


7 Disconnect the Power Button cable connector from the system board.

NEXT STEP

Removal & Replacement

System Board Bracket

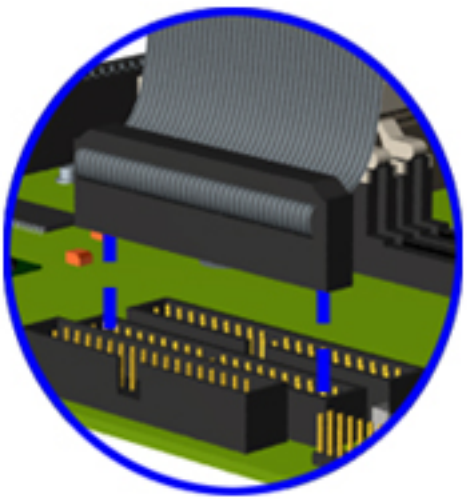


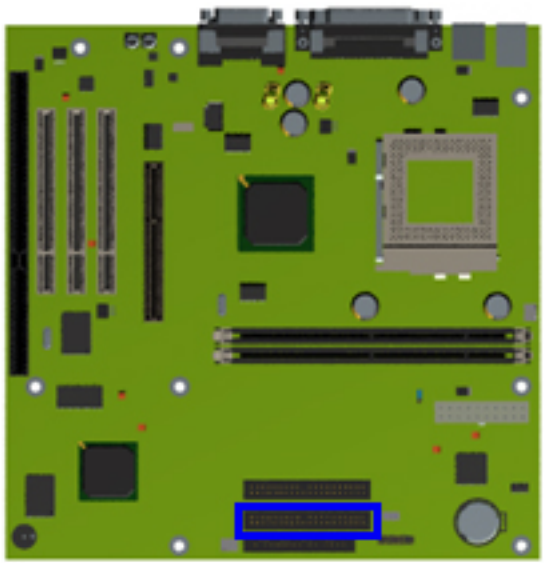
8 Disconnect the CD drive data cable from the system board.

NEXT STEP

Removal & Replacement

System Board Bracket



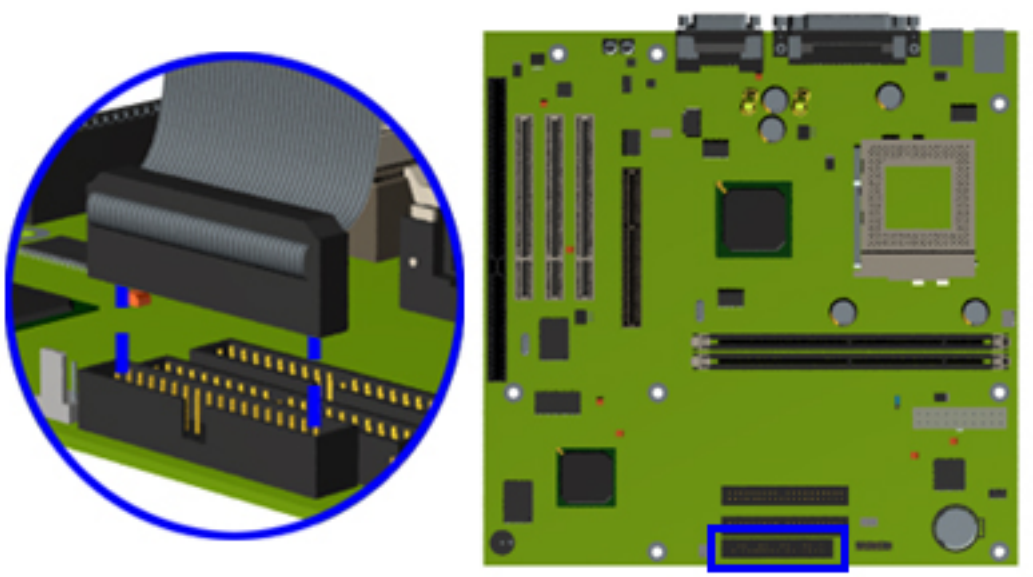


9 Disconnect the hard drive data cable from the system board.

NEXT STEP

Removal & Replacement

System Board Bracket



10 Disconnect the diskette drive cable from the system board.

END OF SEQUENCE

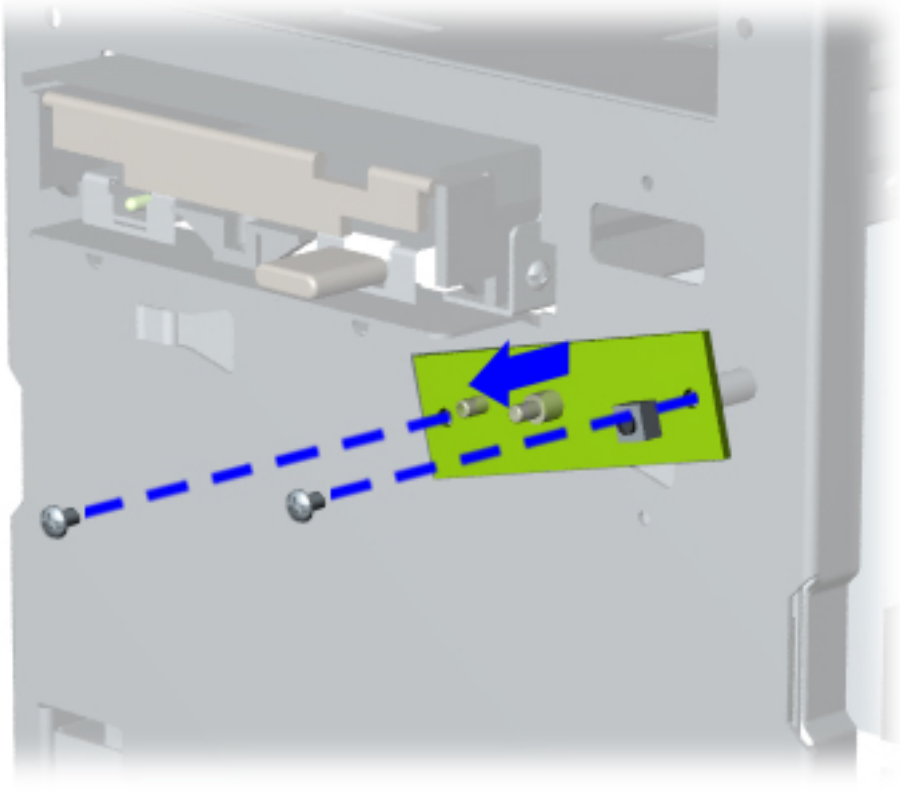
To replace the system board bracket, reverse this procedure.

CAUTION: When replacing the system board bracket, ensure the fingers of the I/O bracket are properly aligned to prevent bending the fingers. Bending the bracket fingers may damage the system board.

Return to Removal & Replacement Index Page.

Removal & Replacement

On-Button Board



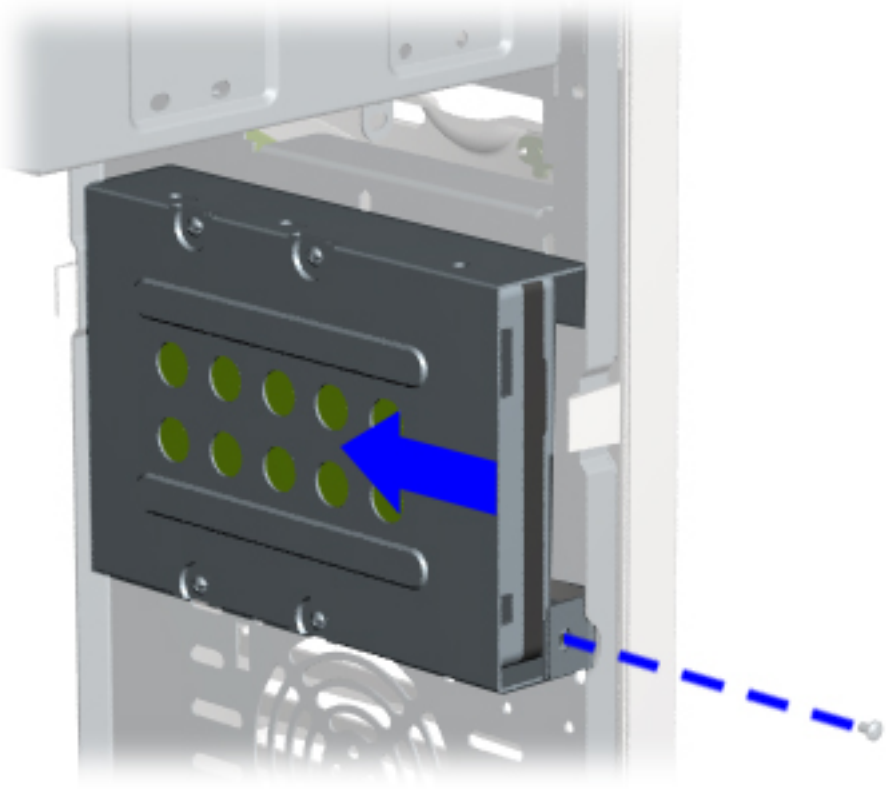
5 Remove (2) screws from the button assembly and remove it from the front of the chassis.

To replace the button board assembly, reverse this procedure.

Return to Removal & Replacement Index Page.

Removal & Replacement

Hard Drive



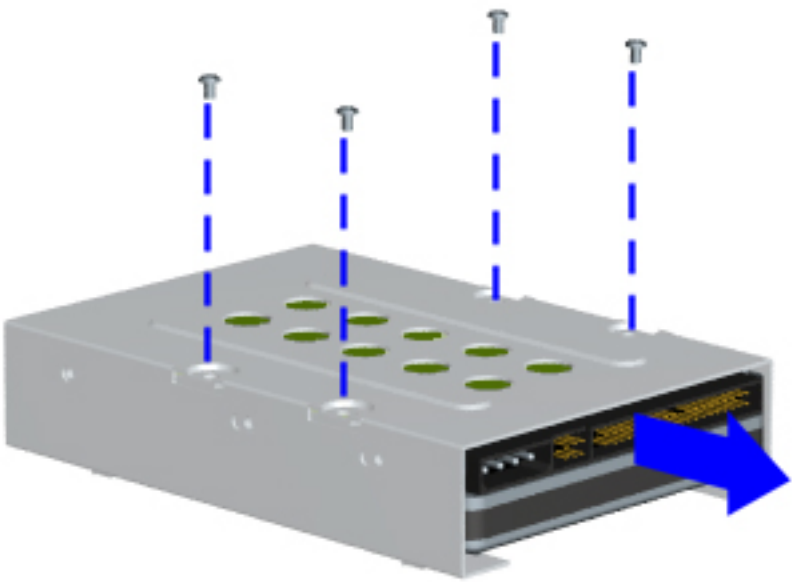
4 Remove the one screw from the top of the hard drive bracket and chassis.

5 Carefully push the hard drive bracket back and lift it out of the chassis.

NEXT STEP

Removal & Replacement

Hard Drive



6 Remove the four screws at the bottom of the hard drive bracket to release the hard drive.

END OF PROCEDURE

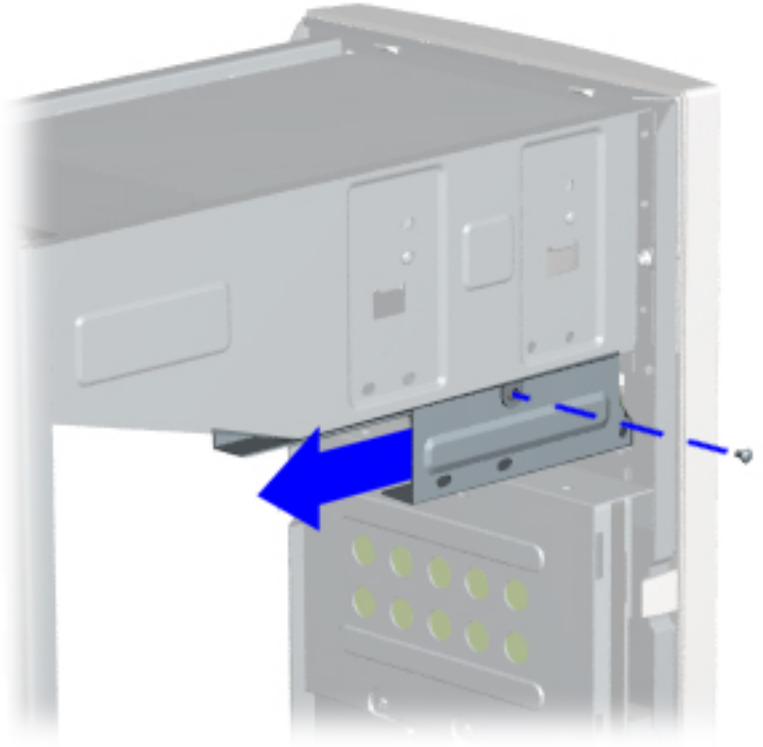
To replace the 3.5-inch hard drive, reverse this procedure.

Return to Drive index page

Return to Removal & Replacement Index Page.

Removal & Replacement

Diskette Drive



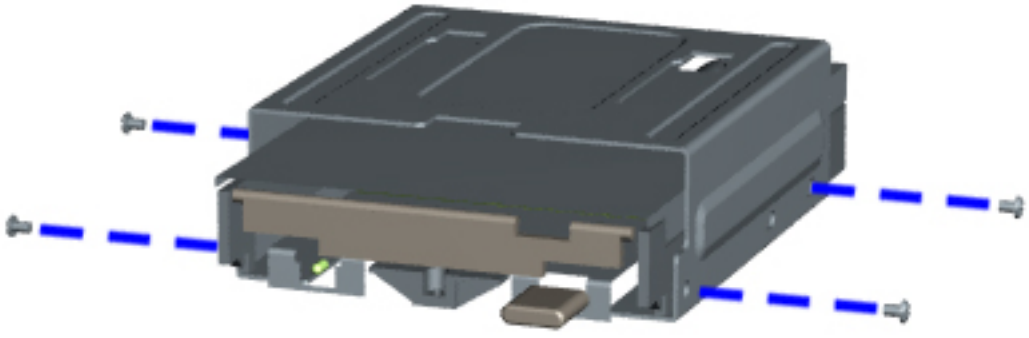
5 Remove (1) screw which holds the diskette drive bracket to the chassis.

6 Grasp the drive on both sides and pull it straight back and out of the chassis.

NEXT STEP

Removal & Replacement

Diskette Drive



7 Remove the four screws from the sides of the diskette drive bracket to release the diskette drive from the bracket.

END OF SEQUENCE

To replace the diskette drive, reverse this procedure.

Return to Drive index page.

Return to Removal & Replacement Index Page.

Removal & Replacement

CD Drive Removal

4 Remove the four screws from the sides of the CD drive.

5 Pull the CD drive straight out of the front of the chassis.

END OF SEQUENCE

To replace the CD drive, reverse this procedure.

Return to Drive index page.

Return to Removal & Replacement Index Page.

Removal & Replacement

Removing a Jammed CD from the Drive

Insert a straightened paper clip into the manual eject hole and push firmly.

Return to CD Drive Removal.

Return to Removal & Replacement Index Page.

MAINTENANCE & SERVICE GUIDE

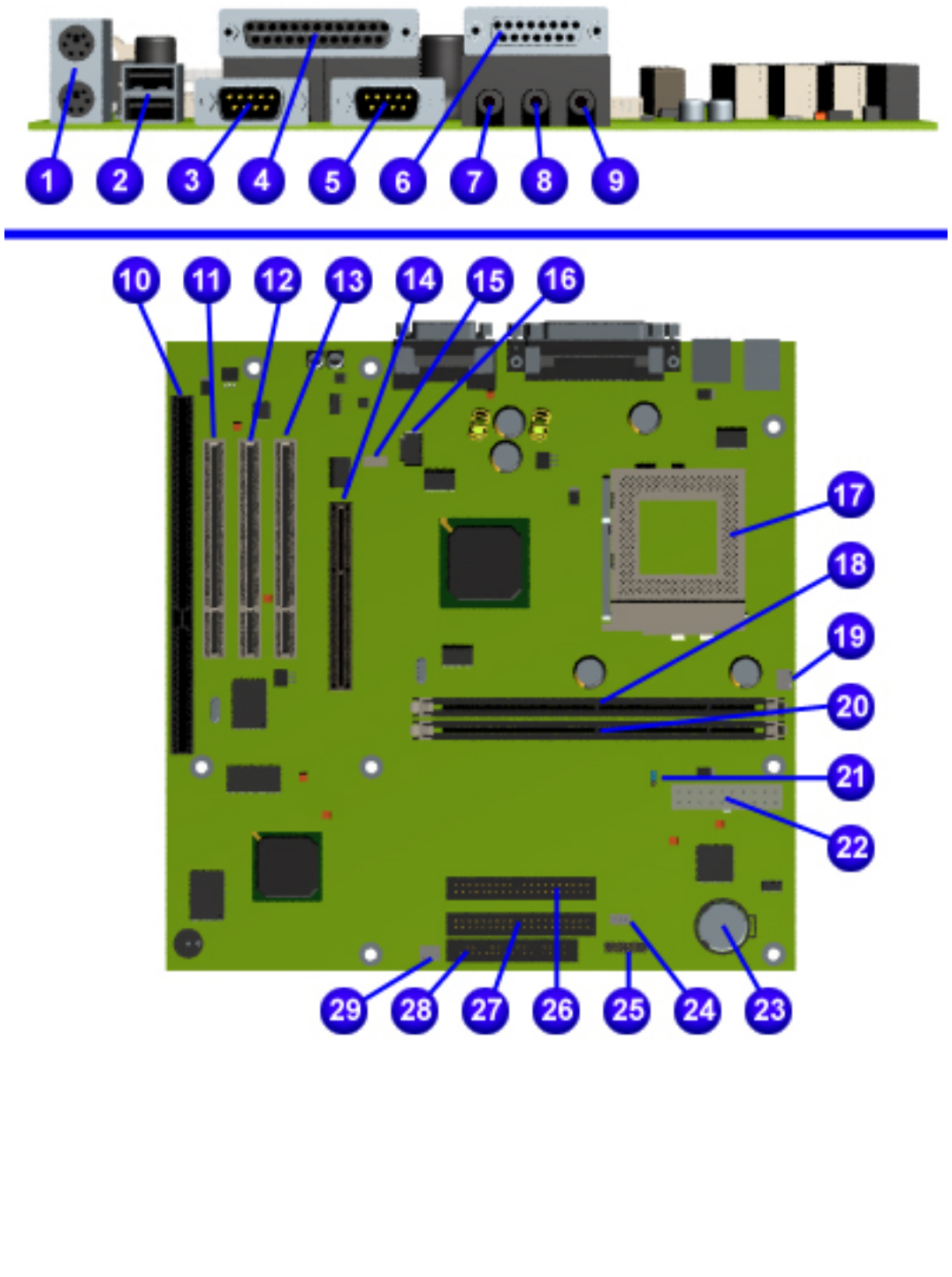
for Prosignia 320 Series Computer

Jumper & Switch Information

System Board Connectors & Jumper

Section Navigation:

- *> System Board Connectors & Jumper*
- *> 32X CD Jumper Positions*
- *> 52X CD Jumper Positions*
- *> 9.1-GB Hard Drive Jumper Positions*
- *> 13.5-GB Hard Drive Jumper Positions*
- *> 18-GB Hard Drive Jumper Positions*



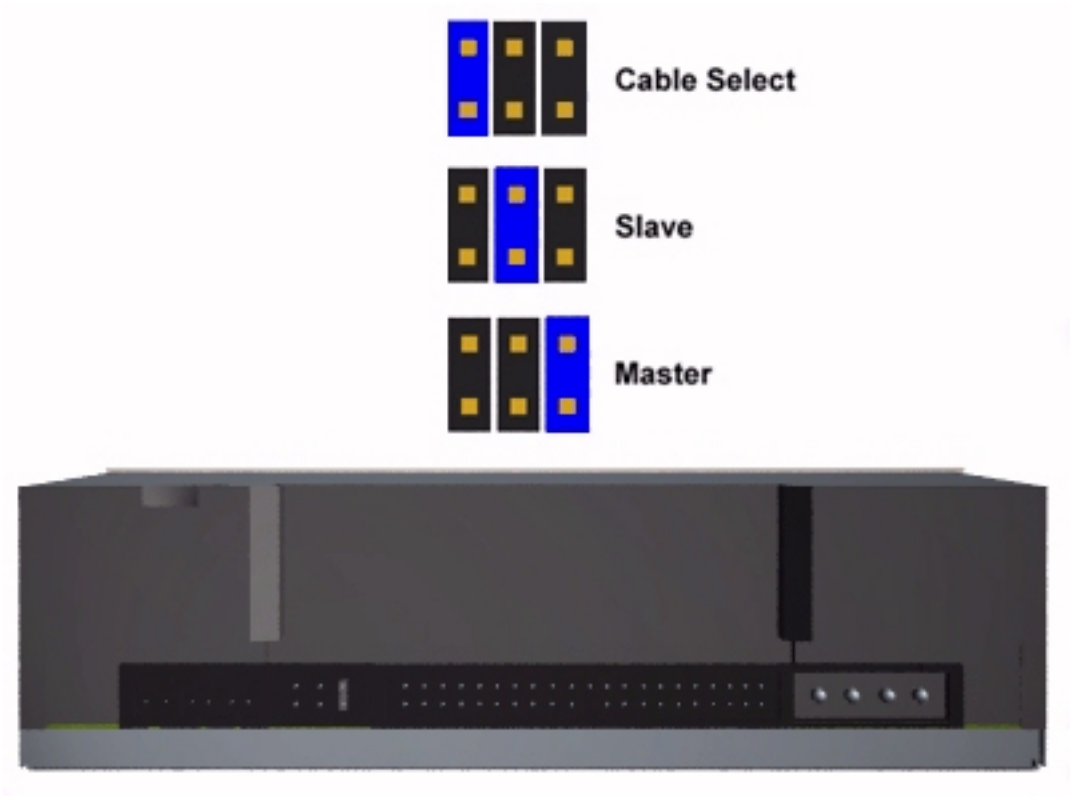
Function		Description	Reference Designator
1	Keyboard & Mouse	Miniature 6-pin	J1K1
2	USB	USB connector	J1J1
3	Serial port	DSUB 15-pin	J1H1
4	Parallel port	DSUB 25-pin	J1H1
5	Serial port	DSUB 15-pin	J1H1
6	Game port	DSUB 15-pin	J1F1
7	Audio line out	Mini stereo	J1E1
8	Audio line in	Mini stereo	J1E1
9	Microphone in	Mini stereo	J1E1
10	ISA Slot	16-bit ISA connector	J4A2
11	PCI Slot	32-bit PCI connector	J4A1
12	PCI Slot	32-bit PCI connector	J4B1
13	PCI Slot	32-bit PCI connector	J4C1
14	AGP Slot	15-pin VGA	J4D1
15	CD-ROM audio	4-pin header	J2D5
16	AGP board connector	4-pin header	J2E1
17	Socket 7	370-pin PGA	J4H1
18	DIMM socket	168-pin DIMM	J6G1
19	Optional fan	3-Pin Header	J6K1
20	DIMM socket	168-pin DIMM	J6G2
21	Clearing CMOS Jumper	3-pin jumper	J7H1
22	Power supply connector	12-pin ATPWR header	J7J1
23	RTC Battery Socket	Battery holder	BT9J1
24	Optional fan	4-pin header, key 2	J21
25	On-Button board Conector	16-pin header, key 2	J10H1
26	IDE drive	40-pin headers, key 20	J9F1
27	IDE drive	40-pin headers, key 20	J9F2
28	Diskette drive	34-pin header	J10F1
29	Optonal fan	4-pin header, key 2	J10D1

Jumper & Switch Information

32x CD Drive Jumper Positions

Section Navigation:

- > System Board Connectors & Jumper
- >32X CD Jumper Positions
- >52X CD Jumper Positions
- >9.1-GB Hard Drive Jumper Positions
- >13.5-GB Hard Drive Jumper Positions
- >18-GB Hard Drive Jumper Positions

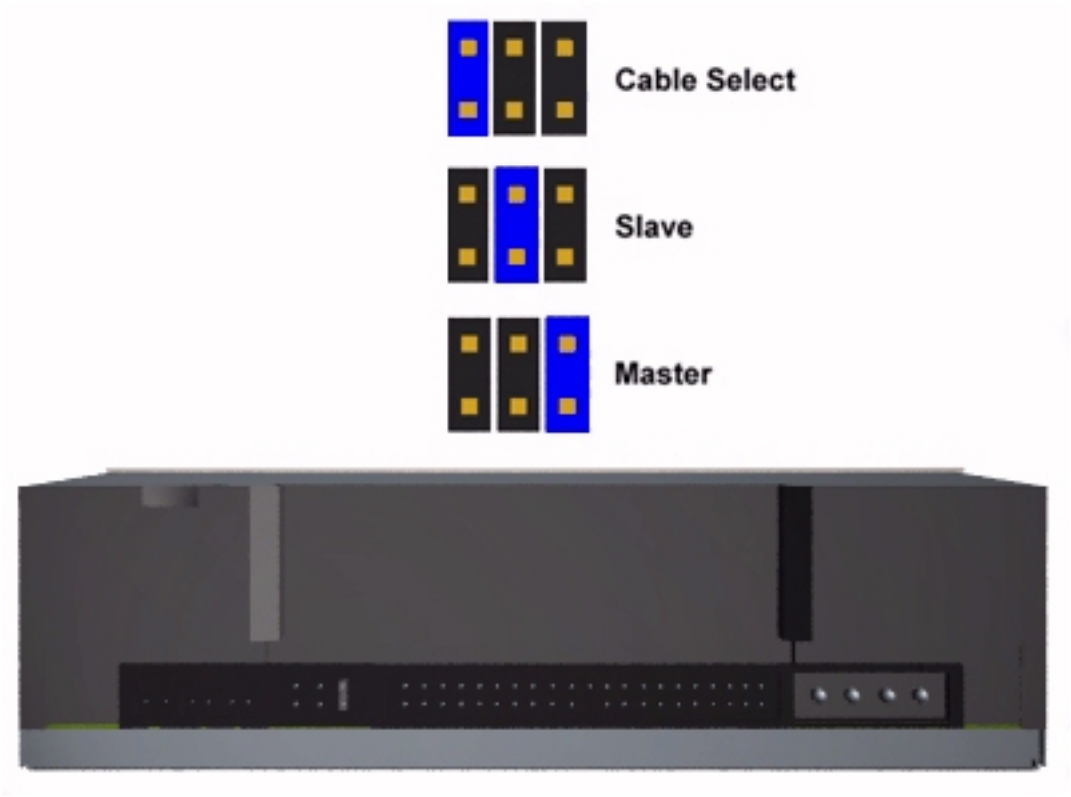


Jumper & Switch Information

52x CD Drive Jumper Positions

Section Navigation:

- > System Board Connectors & Jumper
- > 32X CD Jumper Positions
- > 52X CD Jumper Positions
- > 9.1-GB Hard Drive Jumper Positions
- > 13.5-GB Hard Drive Jumper Positions
- > 18-GB Hard Drive Jumper Positions

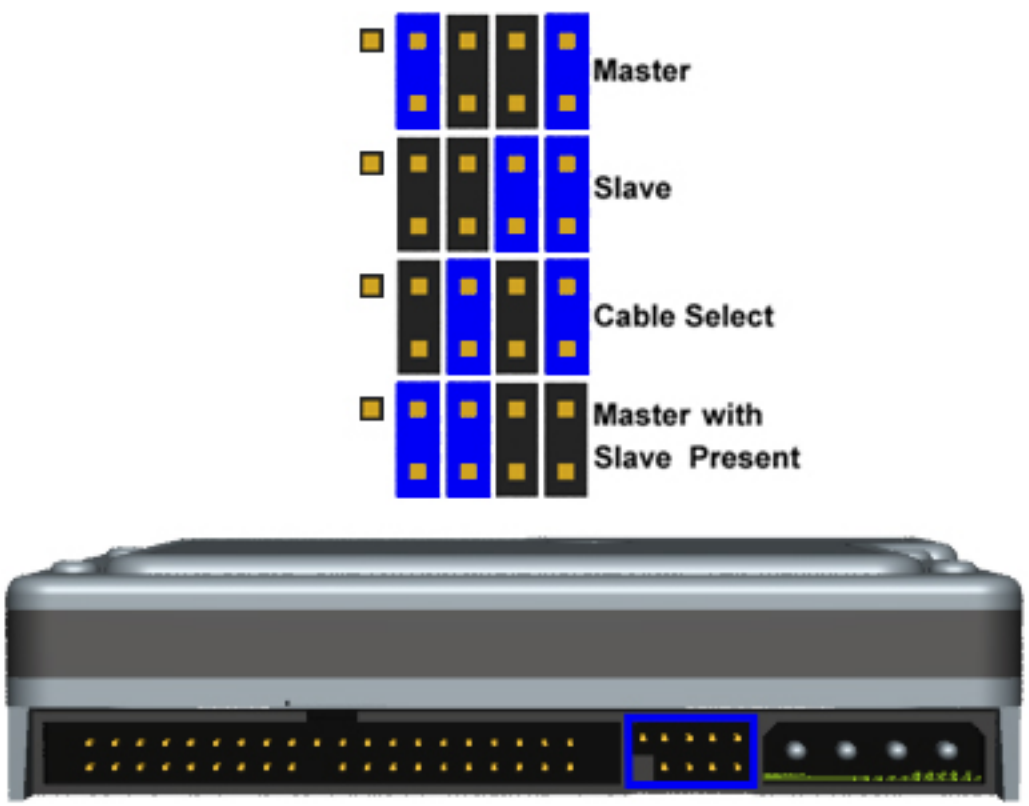


Jumper & Switch Information

9.1-GB Hard Drive Jumper Positions

Section Navigation:

- > System Board Connectors & Jumper
- > 32X CD Jumper Positions
- > 52X CD Jumper Positions
- > 9.1-GB Hard Drive Jumper Positions
- > 13.5-GB Hard Drive Jumper Positions
- > 18-GB Hard Drive Jumper Positions

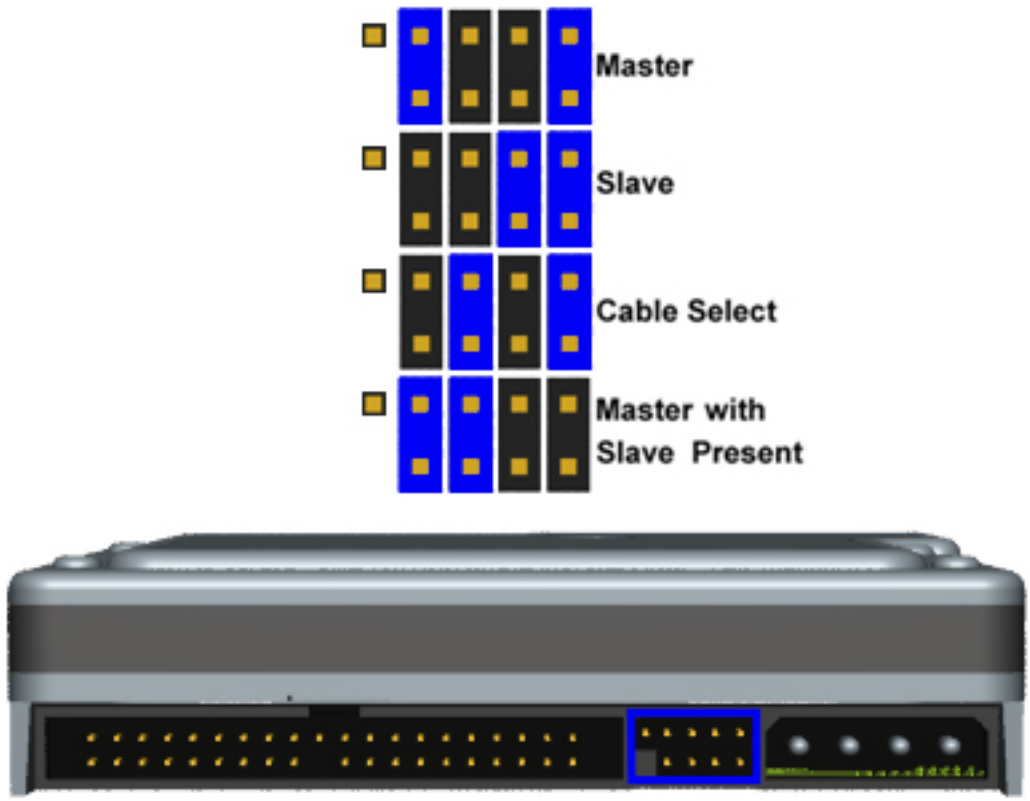


Jumper & Switch Information

13.5-GB Hard Drive Jumper Positions

Section Navigation:

- > System Board Connectors & Jumper
- > 32X CD Jumper Positions
- > 52X CD Jumper Positions
- > 9.1-GB Hard Drive Jumper Positions
- > 13.5-GB Hard Drive Jumper Positions
- > 18-GB Hard Drive Jumper Positions

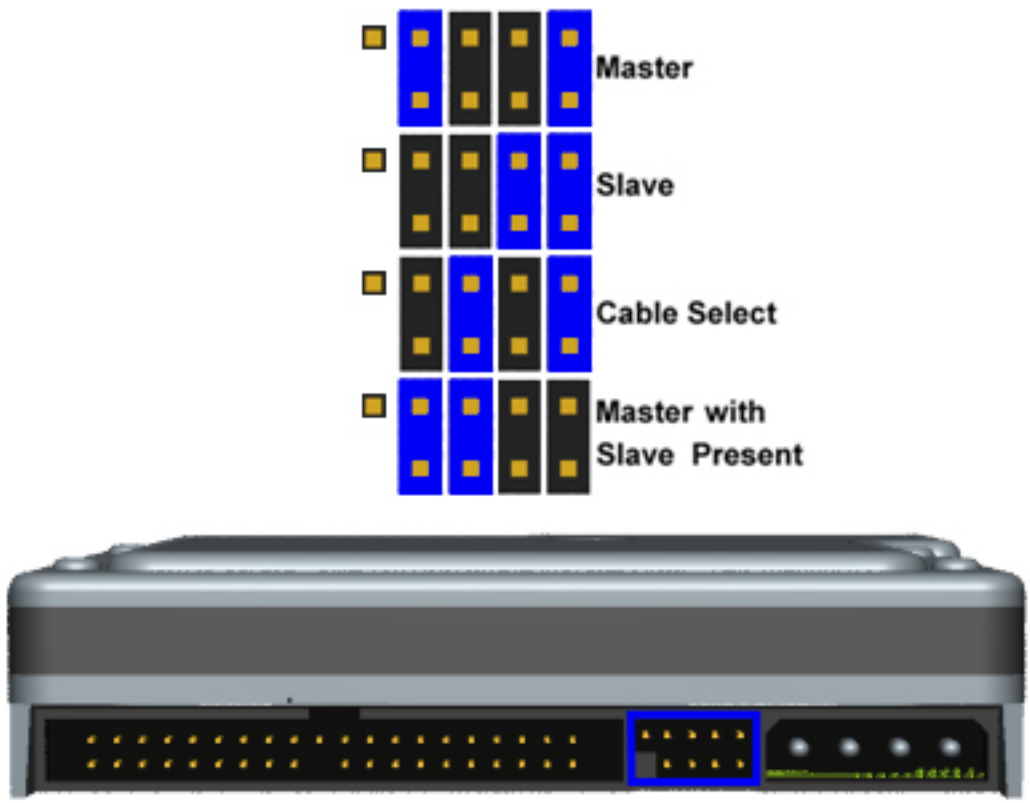


Jumper & Switch Information

18-GB Hard Drive Jumper Positions

Section Navigation:

- >System Board Connectors & Jumper
- >32X CD Jumper Positions
- >52X CD Jumper Positions
- >9.1-GB Hard Drive Jumper Positions
- >13.5-GB Hard Drive Jumper Positions
- >18-GB Hard Drive Jumper Positions



MAINTENANCE & SERVICE GUIDE

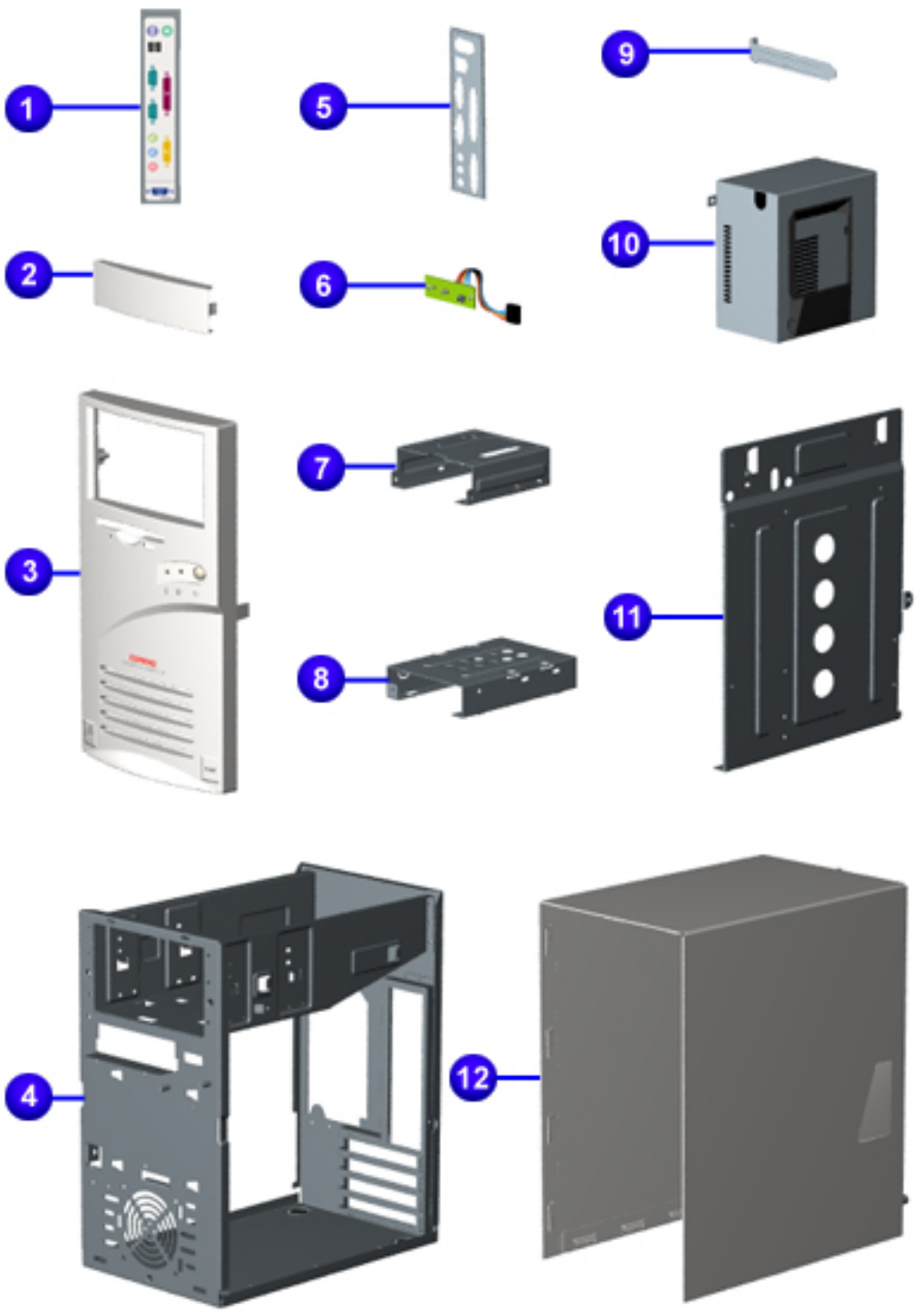
for Prosignia 320 Series Computer

Illustrated Parts Catalog

System Unit

Section Navigation:

- >System Unit
- >Mass Storage Devices
- >Cable Kit
- >System Board
- >Modem,NIC & Video Card
- >Keyboard
- >Monitors
- >Return Kit
- >Documentation & Software
- >Miscellaneous



Description		Spare Part #
1	I/O sticker	N/A
2	Plastic Blank Panel	N/A
3	Front Bezel	149804-001
4	Chassis	N/A
5	I/O Panel	149805-001
6	Power Button with cable	166925-001
7	Diskette Drive Bracket	161734-001
8	Hard Drive Bracket	149807-001
9	Option Slot Cover	304284-001
10	Power Supply	136337-001
11	System Board Bracket	N/A
12	Hood	149800-001

Illustrated Parts Catalog

Mass Storage Devices

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- >Cable Kit
- >System Board
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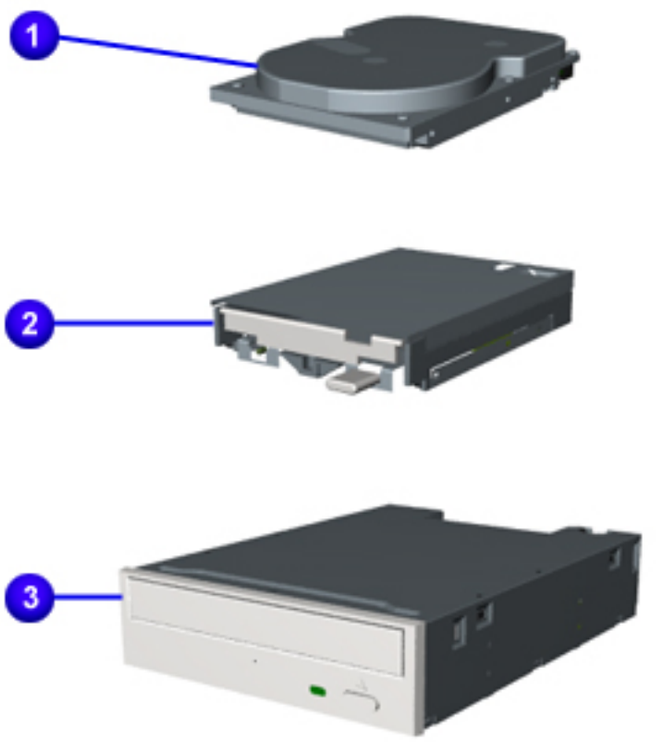
- >Keyboard
- >Monitors
- >Return Kit
- >Documentation & Software
- >Miscellaneous



	Description	Spare Part Number
1	Hard Drives	
	9.1GB	123634-001
	13.5 GB	123635-001
	18 GB:	388510-001
2	1.44-MB Diskette Drive	136338-001
3	CD Drives	
	32X	327659-001
	52X	120696-001

Illustrated Parts Catalog

Cable Kit

Section Navigation:

- >System Unit
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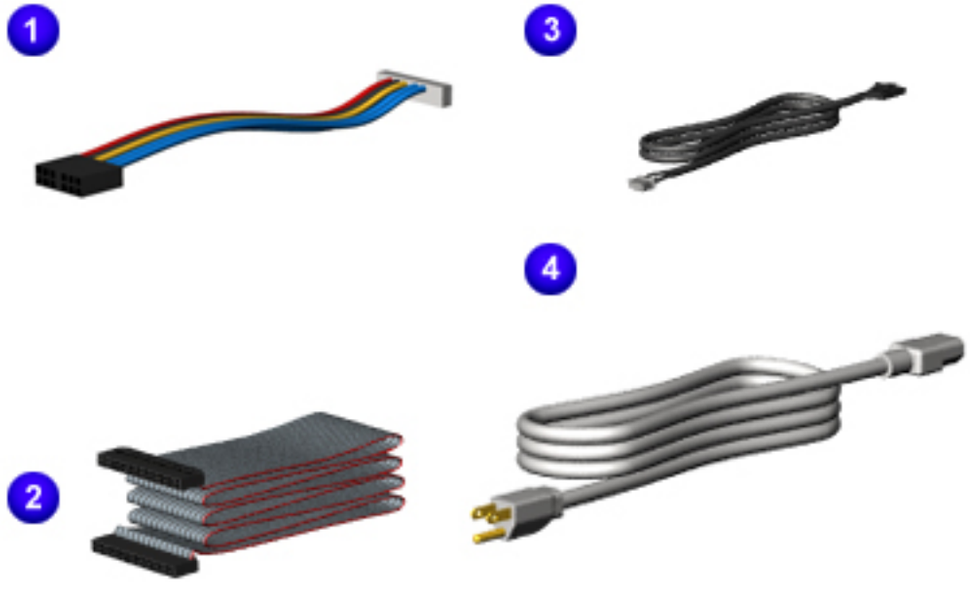
- >Cable Kit
- >System Board
- >Modem, NIC & Video Card
- >Keyboard
- >Monitors
- >Return Kit
- >Documentation & Software
- >Miscellaneous



Description		Spare Part Number
1	Power LED cable	136340-001
2	Data, IDE cables:	
	Diskette Drive	161735-001
3	CD Audio	149806-001
4	Power Cord	142766-001

Illustrated Parts Catalog

System Board Components

Section Navigation:

- >System Unit
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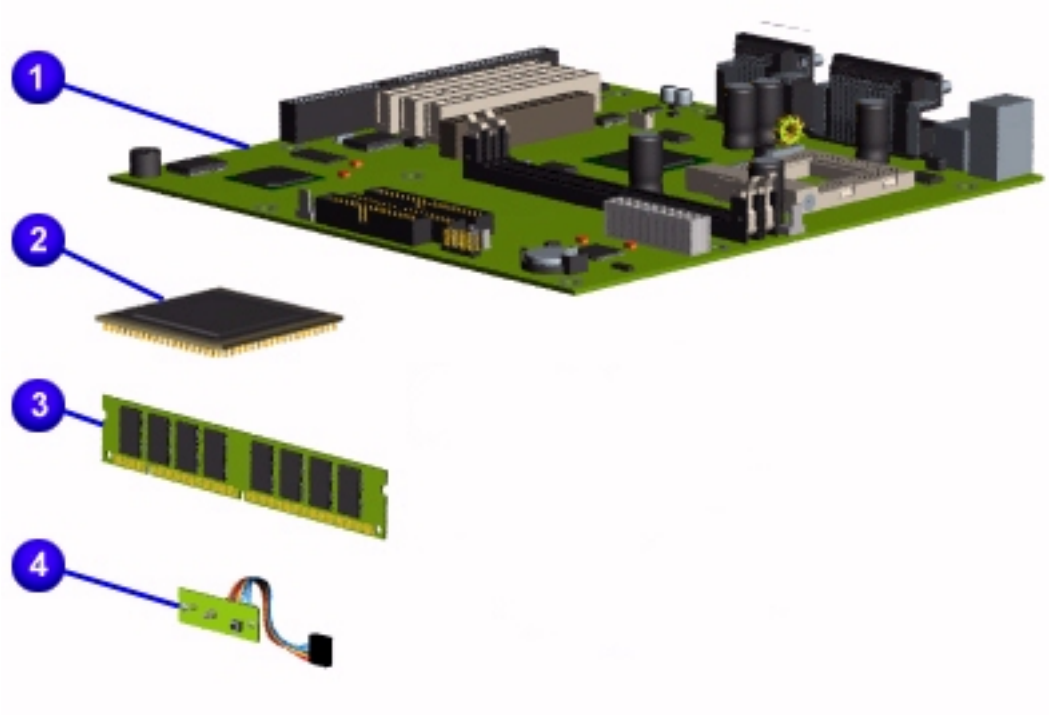
- >Cable Kit
- >System Board
- >Modem,NIC & Video Card
- >Keyboard
- >Monitors
- >Return Kit
- >Documentation & Software
- >Miscellaneous



	Description	Spare Part Number
1	BI440ZX System Board	136339-001
2	Celeron Processors w/ Heatsink	
	400MHZ:	152295-001
	433 MHz:	152296-001
	466 MHz:	149801-001
	500 MHz	166315-001
3	Memory Modules	
	32 MB	166890-001
	64 MB	179190-001
	96 MB	N/A
	128 MB	166966-001
	256 MB	N/A
4	Power Switch with cable	136340-001

Illustrated Parts Catalog

Modem, NIC, & Graphics Cards

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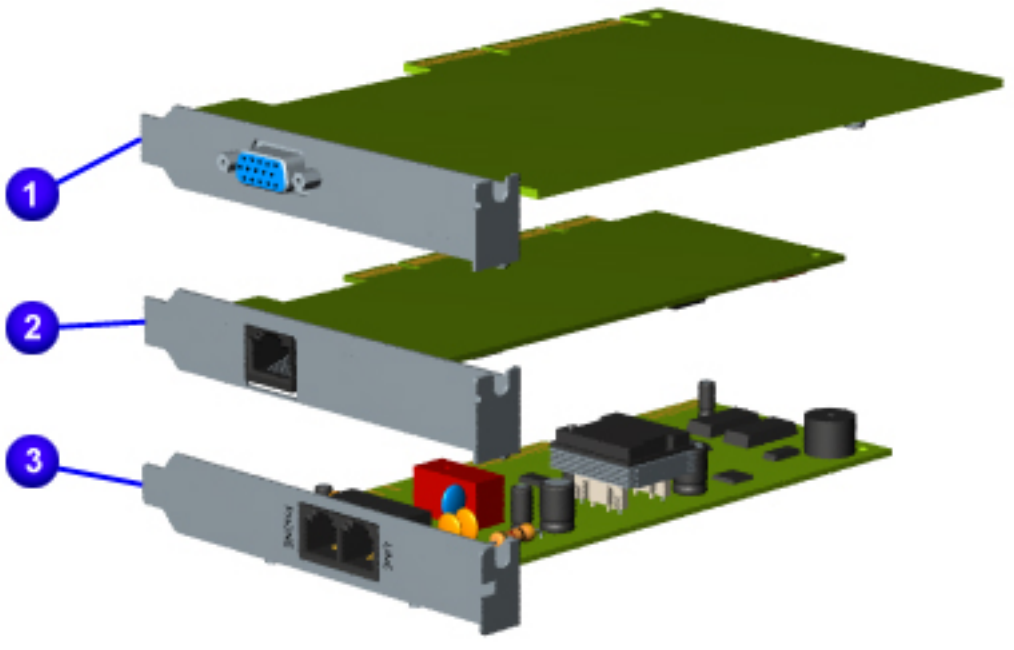
- >Mass Storage Devices
- >Cable Kit
- >System Board
- >Modem,NIC & Video Card
- >Keyboard
- >Monitors
- >Return Kit
- >Documentation & Software
- >Miscellaneous



	Description	Spare Part Number
1	Graphics Cards:	
	nVidia NV4	387577-001
	nVidia TNT2	136345-001
	nVidia Vanta	136346-001
	Rage Pro	166871-001
2	56K PCI Modem	337559-002
3	NIC PCI Cards:	
	3 COM:	179167-001
	Intel WOL:	323553-001

Illustrated Parts Catalog

Keyboard

Section Navigation:

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	Description	Spare Part Number
1	Enhanced Keyboard	166984-001
	Internet Keyboard (not Pictured)	135510-001
	Spacesaver Keyboard (not pictured)	
	UK	269513-031
	France	269513-051
	Latin America	269513-161
	Japan	269513-292
	International	269513-B31

MAINTENANCE & SERVICE GUIDE

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Illustrated Parts Catalog

Monitors

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- >Miscellaneous

Compaq Monitor	Part Number
V55 15"	308011-001
V75 17"	307713-001
V900 19"	303514-001
V1000 21"	351760-001
S700 17"	360513-001
S900 19"	360563-001
P75 17"	307815-001
P110 21"	328267-001
P1610 24"	305710-001

Illustrated Parts Catalog

Return Kit

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- >Keyboard
- >Monitors
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- >Miscellaneous

Description	Spare Part Number
Return kit	Part number not yet available.
Carton and buns	Part number not yet available.
Return kit with packing, Compaq Prosignia monitor model	Part number not yet available.

Illustrated Parts Catalog

Documentation & Software

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- >Keyboard
- >Monitors
- >Return Kit
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- >Miscellaneous

Description		Spare Part Number
Quick Restore Kit		
	Windows NT	Windows 98
U.S.	125786-001	147216-001
UK	N/A	147216-031
France	N/A	125363-051
Japan	N/A	147233-191
Latin America	N/A	158882-161
Brazilian Portuguese	N/A	158882-201
Quick Reference Guide		
Volume 1	Quantity of 1	185861-001
Volume 2	Quantity of 5	106854-001
Volume 2	Quantity of 1	162212-001
Volume 2, subscription	Quantity of 5, delivered each quarter	184961-001*
Volume 2, subscription	Quantity of 1, delivered each quarter	184960-001*
QuickFind for Windows	US edition	137906-xx**

**Subscription orders are not available in Europe, the Middle East, and Africa. In other countries, contact your local Compaq office for availability.*

***QuickFind is updated monthly. To complete the QuickFind part number, add the suffix from the table below for the desired month. If you do not specify the 3-digit suffix, the default is the current month in which the order is placed.*

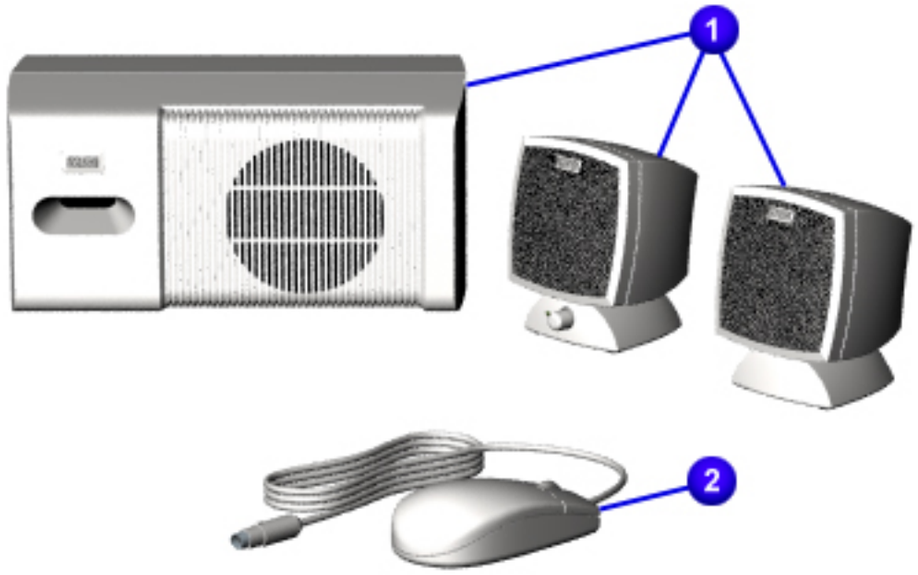
Suffix	Month	Suffix	Month	Suffix	Month	Suffix	Month
-001	January	-004	April	-007	July	-010	October
-002	February	-005	May	-008	August	-011	November
-003	March	-006	June	-009	September	-012	December

Illustrated Parts Catalog

Miscellaneous

Section Navigation:

- >System Unit
- >Mass Storage Devices
- >Cable Kit
- >System Board
- >Modem, NIC & Video Card
- >Keyboard
- >Monitors
- >Return Kit
- >Documentation & Software
- >Miscellaneous



	Description	Spare Part Number
1	SBS 50 Speakers	125774-001
2	Mouse USB Intelli Mouse	123636-001

Items not pictured:

SBS 52 Speakers:	
US	125773-001
Australia	125773-011
Europe	125773-021
UK	125773-031
PCI 512V SoundBlaster	120418-001

Product Description

Models & Features

Section Navigation:

- >Models
- >CPU Controls & Lights
- >Keyboard Controls and Lights
- >CPU Rear Connectors
- >Power Cord Set Requirements

Model Number	Processors	Cache	Hard Drives	SDRAM	CD Drives
U.S.					
320	400 MHz	32KB of L1	9.1 GB	256 MB	32x
	433 MHz	128KB of L2	13.5 GB		52x
	466 MHz		18 GB		

Product Description

CPU Controls & Lights

Section Navigation:

- >Models
- >CPU Controls & Lights
- >Keyboard Controls and Lights
- >CPU Rear Connectors
- >Power Cord Set Requirements

1	Diskette Drive.
2	Diskette Drive manual eject button.
3	Diskette Drive eject button.
4	CD drive.
5	CD drive activity light.
6	CD manual eject slot.
7	CD load/eject button.
8	Hard Drive activity light.
9	Power status light.
10	Power button.

MAINTENANCE & SERVICE GUIDE

for Prosignia 320 Series Computer

Product Description

Keyboard Controls & Lights

Section Navigation:
>Models
>CPU Controls & Lights
>Keyboard Controls and Lights
>CPU Rear Connectors
>Power Cord Set Requirements

Enhanced Keyboard

Click here for the top right corner of this keyboard.

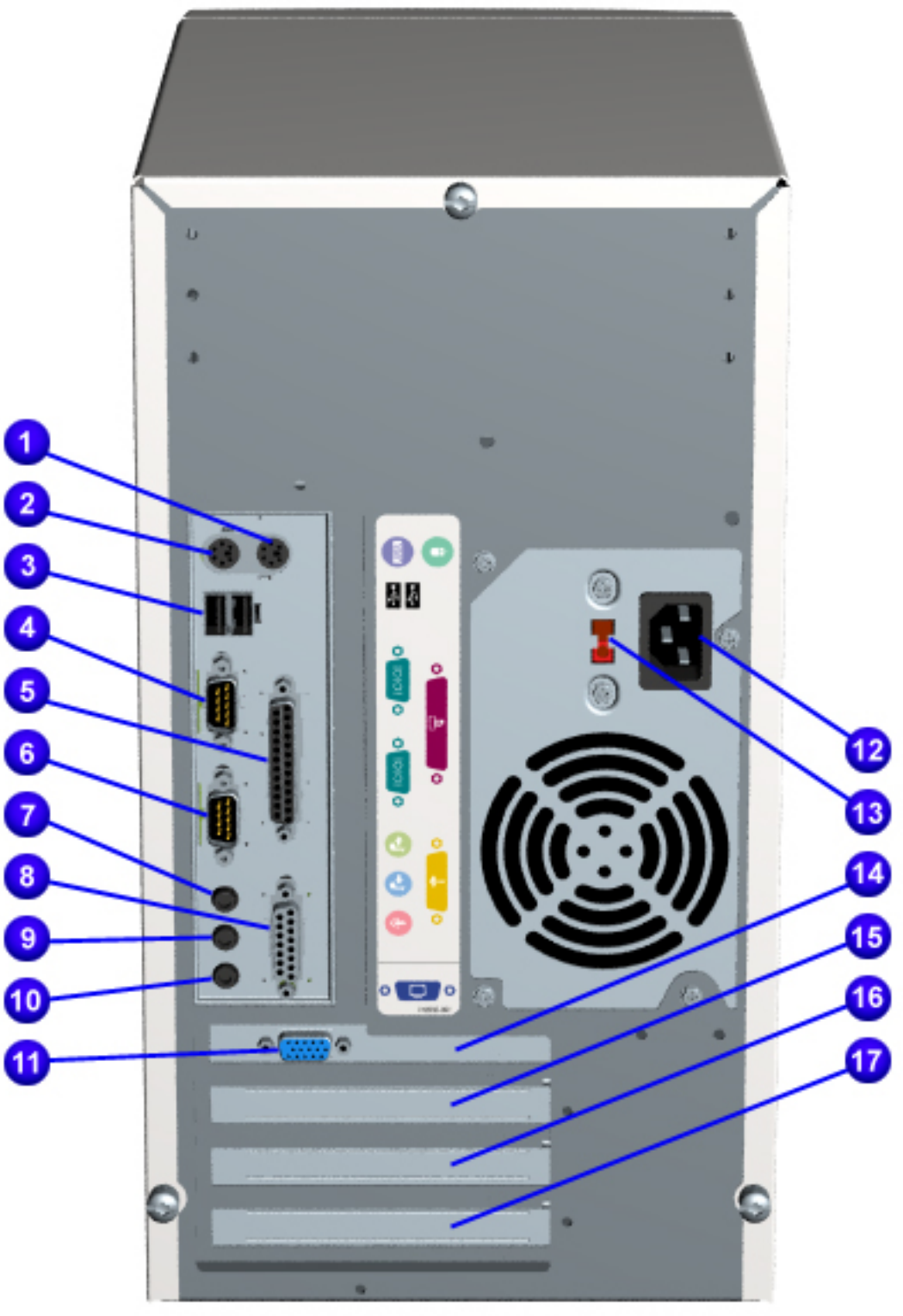
MAINTENANCE & SERVICE GUIDE

for Prosignia 320 Series Computer

Product Description

CPU Rear Connectors

Section Navigation:
- >Models
- >CPU Controls & Lights
- >Keyboard Controls and Lights
- >CPU Rear Connectors
- >Power Cord Set Requirements



1	Mouse
2	Keyboard
3	USB
4	Serial port
5	Parallel Port
6	Serial port 2
7	Audio line out
8	Audio Line in
9	Game port
10	Microphone in
11	Video connector
12	AC power connector
13	Voltage select switch
14	AGP Card slot
15	PCI Card slot
16	2nd PCI Card Slot
17	PCI/ISA Combo. Card slot

CAUTION: Do not plug a phone line into the network connector or you may damage the computer.

Product Description

Power Cord Set Requirements

Section Navigation:

- >Models
- >CPU Controls & Lights
- >Keyboard Controls and Lights
- >CPU Rear Connectors
- >Power Cord Set Requirements

The auto-detect feature on the computer permits it to operate from any line voltage between 120 and 240 volts AC.

The power cord set (flexible cord and wall plug) received with the computer meets the requirements for use in the country where the computer was purchased.

Power cord sets for use in other countries must meet the requirements of the country where you use the computer. For more information on power cord set requirements, contact your Compaq authorized dealer, reseller, or service provider.

General Requirements

The requirements listed below are applicable to all countries:

1. The length of the power cord set must be at least 6.00 feet (1.8 m) and a maximum of 9.75 feet (3.0 m).
2. All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.
3. The power cord set must have a minimum current capacity of 10A and a nominal voltage rating of 125 or 250 volts AC, as required by each country's power system.
4. The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector, for mating with appliance inlet on the Switch Box.

Country-Specific Requirements

Country	Accredited Agency
Australia	EANSW*
Austria	OVE*
Belgium	CEBC*
Canada	CSA**
Denmark	DEMKO*
Finland	SETI*
France	UTE*
Germany	VDE*
Italy	IMQ*
Japan	JIS***
Norway	NEMKO*
Sweden	SEMKO*
Switzerland	SEV*
U.K.	BSI*
U.S.A.	UL**

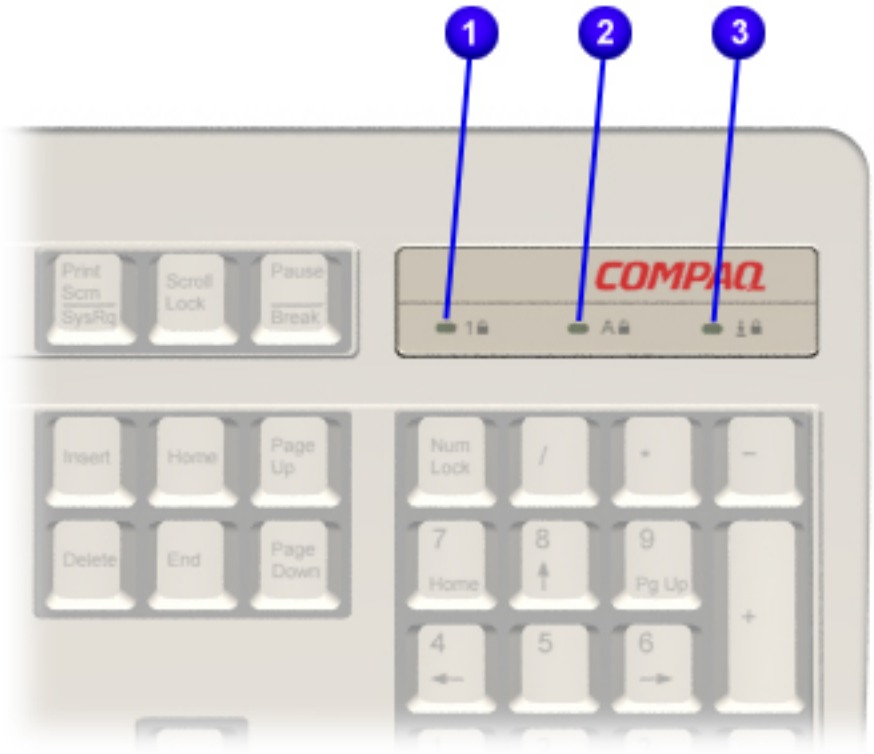
* The flexible cord must be <HAR> Type HO3VV-F, 3-conductor, 1.0 mm2 conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.

** The flexible cord must be Type SJT-2 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15A, 125V) or NEMA 6-15P (15A, 250V) configuration.

*** The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. Flexible cord must be Type VCT or VCTF, 3-conductor, 0.75mm2 conductor size. The wall plug must be a two-pole type with a Japanese Industrial Standard C8303 (15A, 125V) configuration.

Product Description

Keyboard Controls & Lights



Top right corner of Enhanced Keyboard

1	Num Lock Light
2	Caps Lock Light
3	Scroll Lock Light

Return to Keyboard Main Page